LEVEL 3

Science Booklet

Agahi Public School________________________

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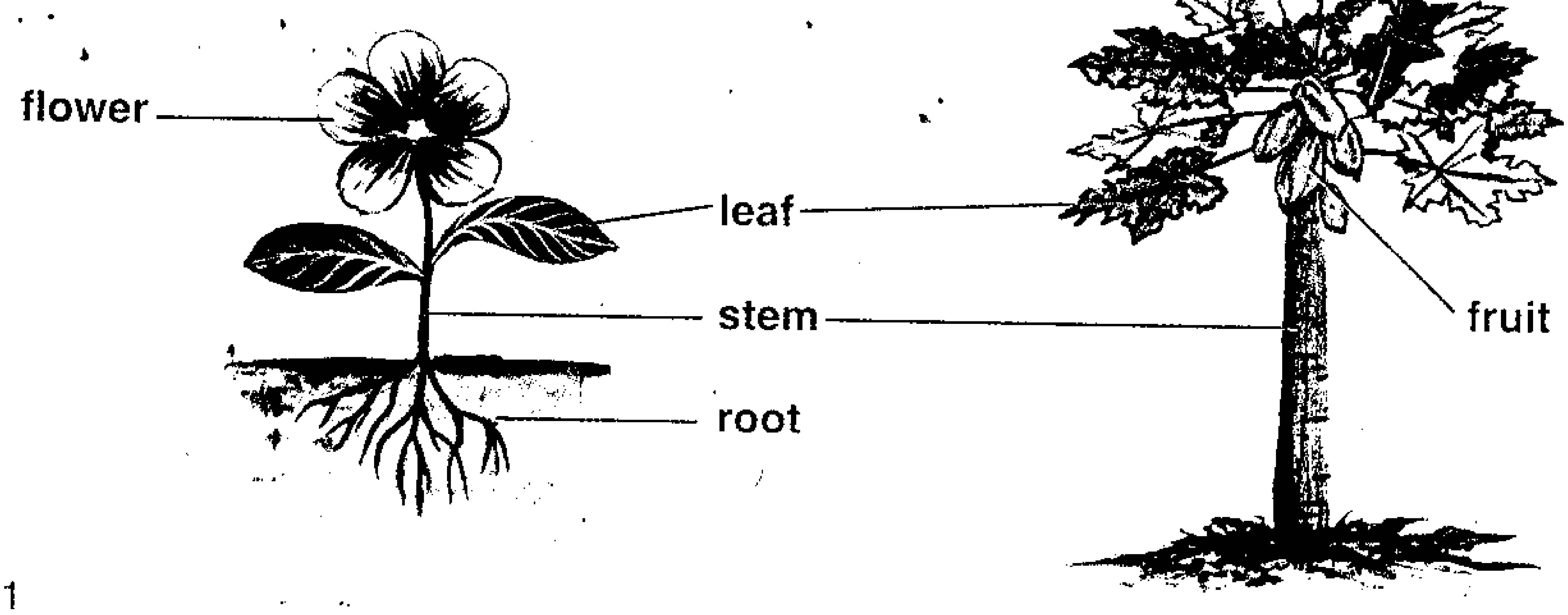
Table of content

LIVING THINGS : PLANTS

plant is a living thing. It needs light, air, soil and water to grow.

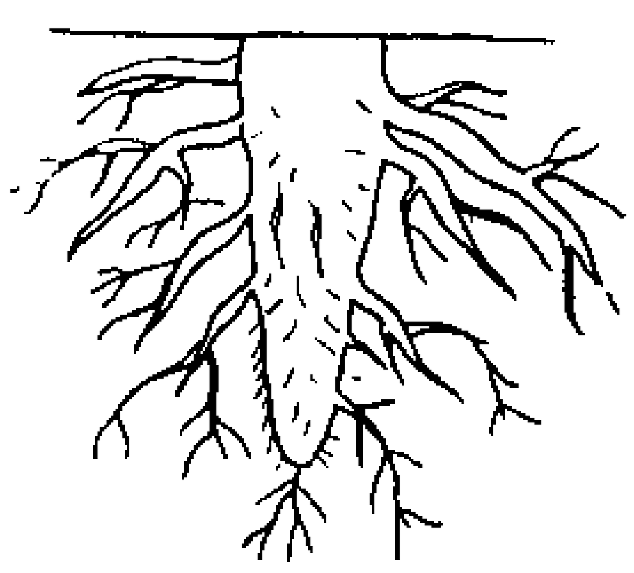
'arts of a Plant

Plants usually have five main parts:
root, stem, leaves, flowers and fruit.

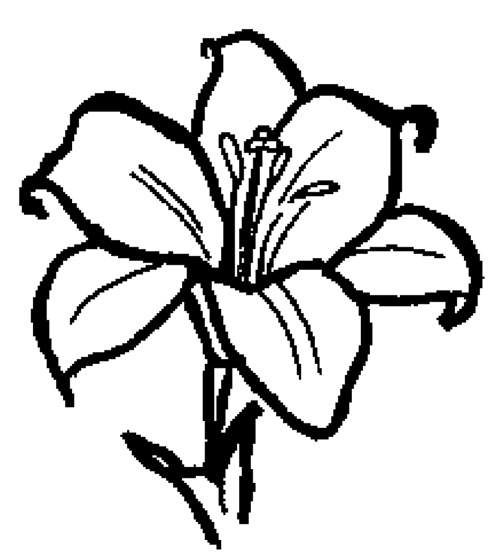


Activity 1

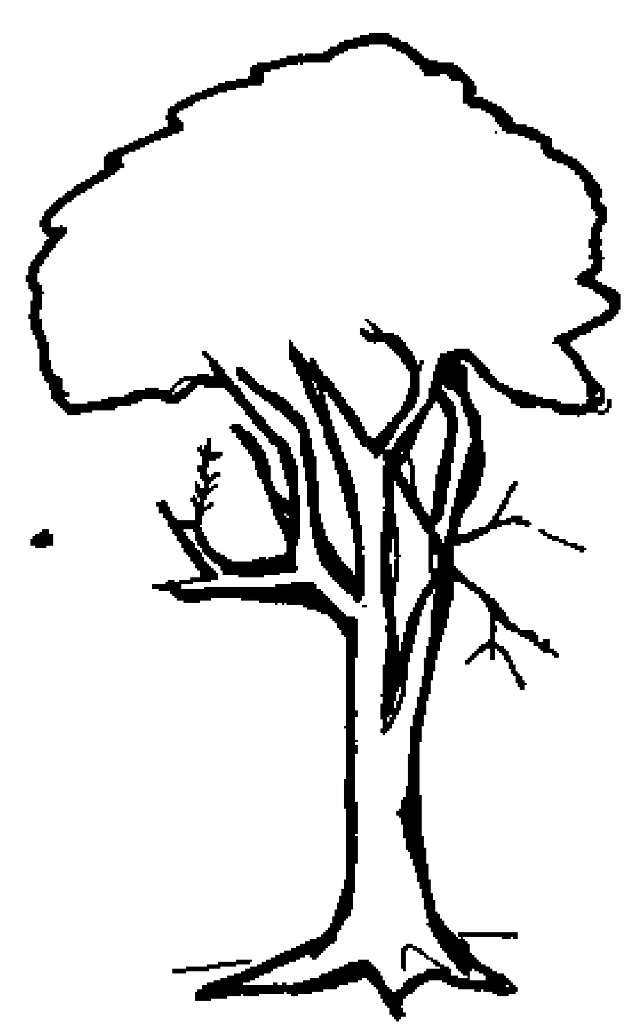
Colour the following pictures. Choose the correct parts from the box below and fill in the blanks.



____



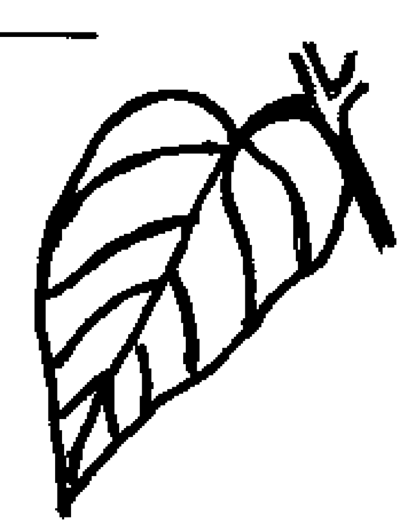
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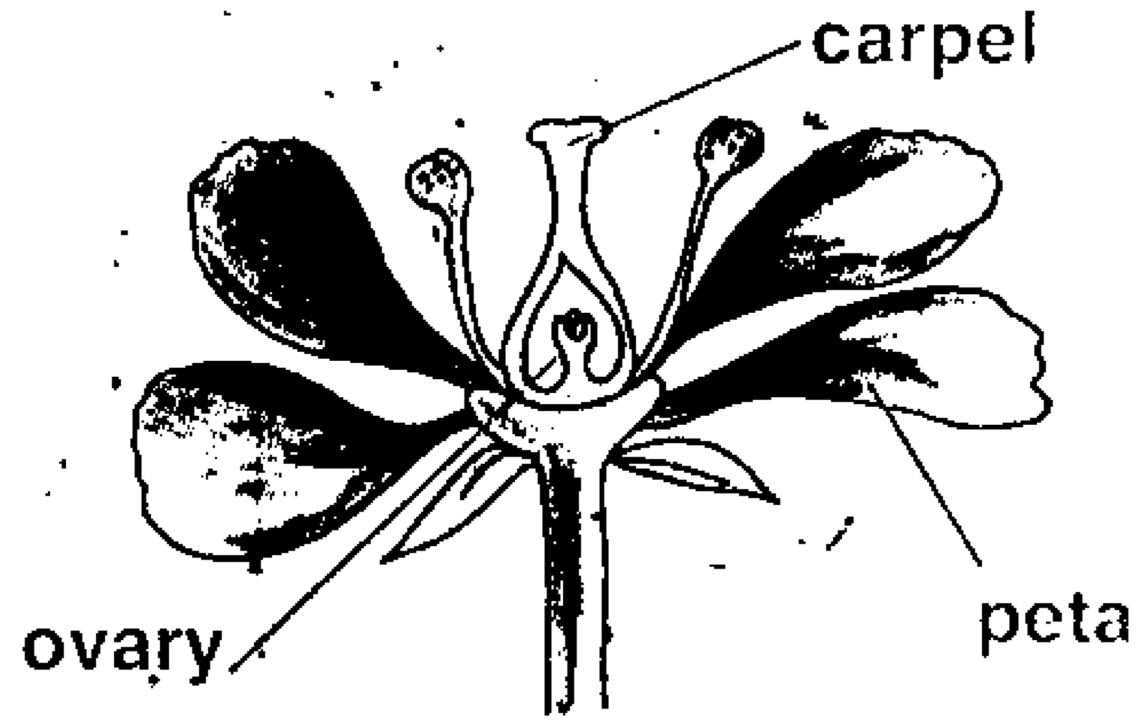
____

fruit **root** **stem** **flower** **leaf**

ıe roots suck water for the plant. The stem has leaves and buds. It carries ater from the roots to the leaves and other parts of the plant.

'een leaves make food for the plant. They also give out oxygen gas.

ıds on the stem grow into new branches and flowers. A flower is the colourful ırt of a plant. Fruits and seeds are made in flowers.



ıe carpel is the female part of the flower.

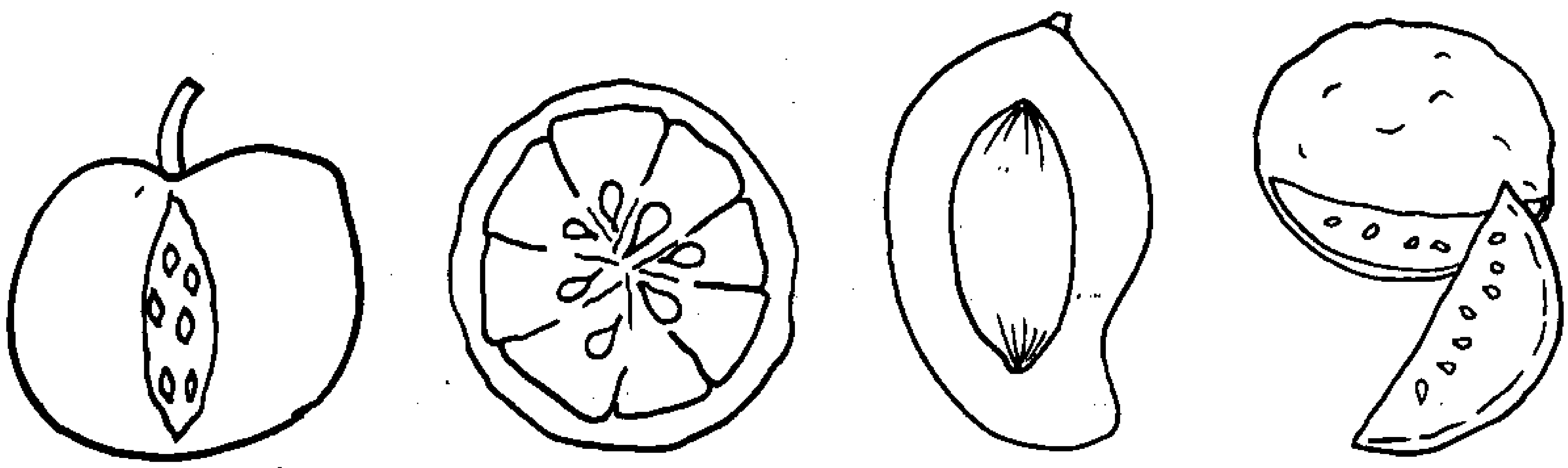
ıe lower part of the carpel is called the ovary. eeds are made inside the ovary. The wall of ıe ovary makes the fruit.

Don't you enjoy eating tasty fruits like mangoes, apples, guavas, papayas and plums?

Can you describe what is inside a fruit?

Activity 2

Colour the seeds in the pictures.



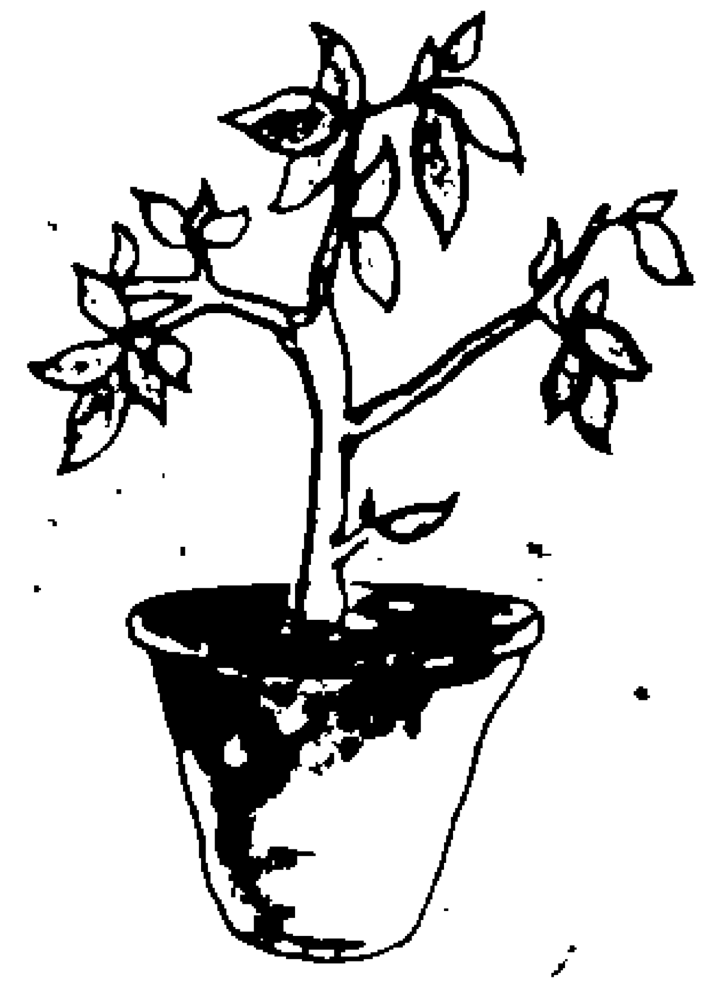
Activity 3

Fill in the table by ticking the right column.

Part	Carrot	Tomato	Onion	Potato	Garlic	Mango	Pea	Rose
root	✓		✓					
stem				✓				
leaf								
fruit		✓				✓		
flower								✓

eeds for Plant Growth

ke animals, plants also need food. Plants make their food from water, air, sunlight nd the soil they grow in. Food helps plants to grow.



et up a potted plant. Do not water it for three days.

eave it on a bright and sunny window sill.
Vhat do you think will happen to the plant after three days?

'ut a brick on a grassy spot in your garden. Lift the brick after three days.

Vhat has happened to the grass? What will happen to a plant if sunlight does not reach it?

. Plants cannot live without water, air, light and ________.
2. Without ________, a plant dries up.
3. Plants wilt if they don't have proper water, ________ light and soil.



All plants need soil, sunlight, water and air to live and grow.

rops

ɔu must have noticed that the shops are full of mangoes in the summer but not winter. Have you ever wondered why?

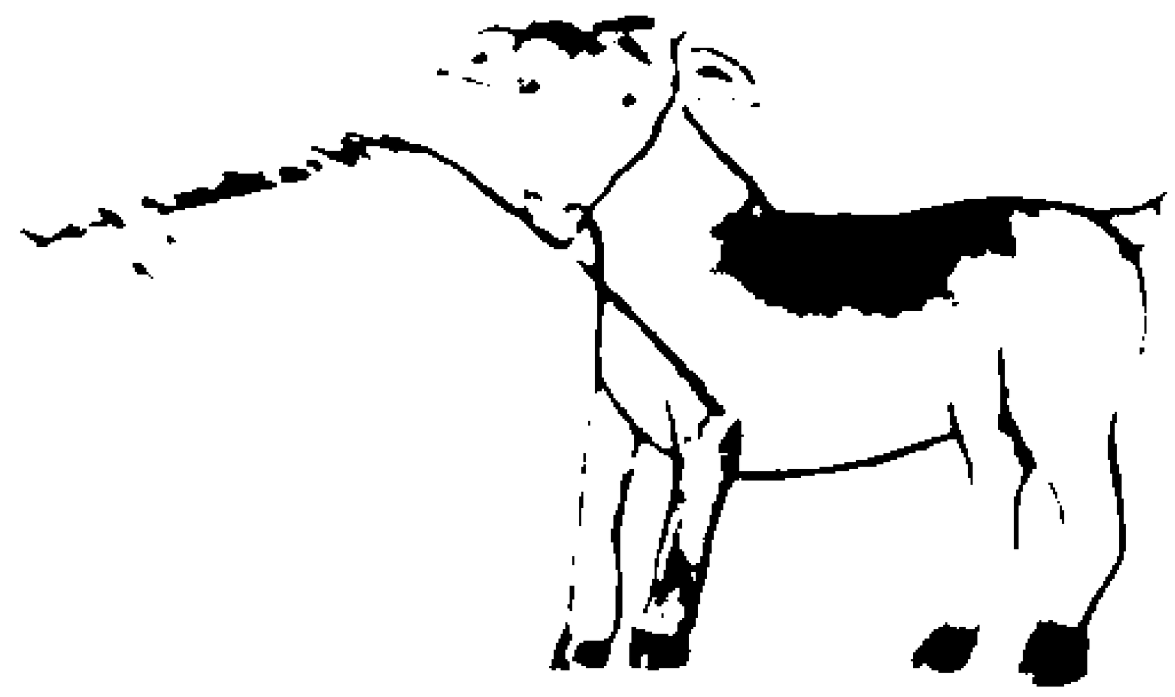
ifferent crops such as fruits, vegetables and food ains grow in different seasons. Pakistan has two ain seasonal crops: *rabi* and *kharif*.

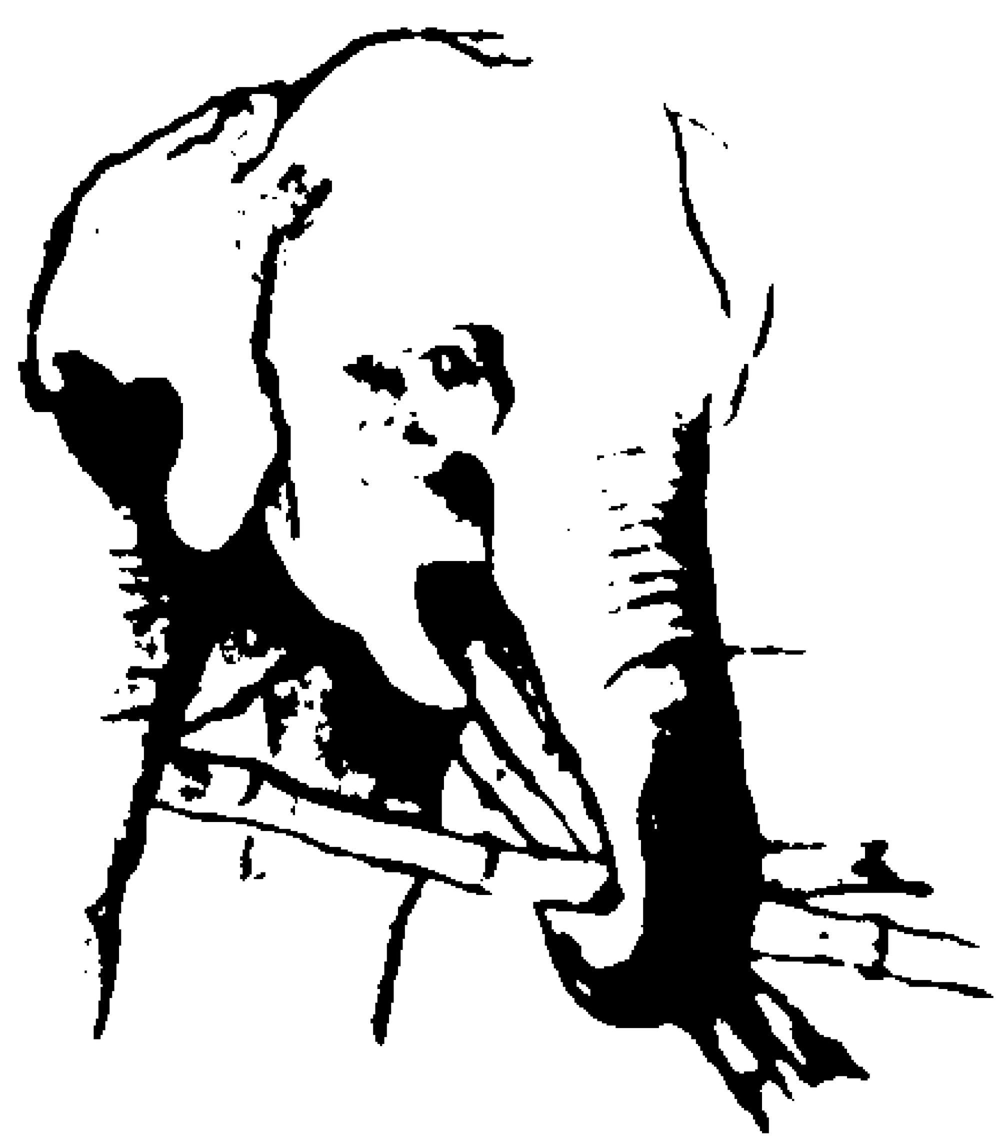


abi crops are grown in winter between October and ɔvember. They are picked in April and May. Wheat, rley, grain and oilseeds are *rabi* crops.

ɜrif crops are grown in summer between April and June. Cotton, rice, corn, *ra* and sugar cane are *kharif* crops.

s are also used by animals as food.







ıbles can be grown throughout the year. n grow them in our gardens.

three *rabi* and three *kharif* crops ɹr notebook.

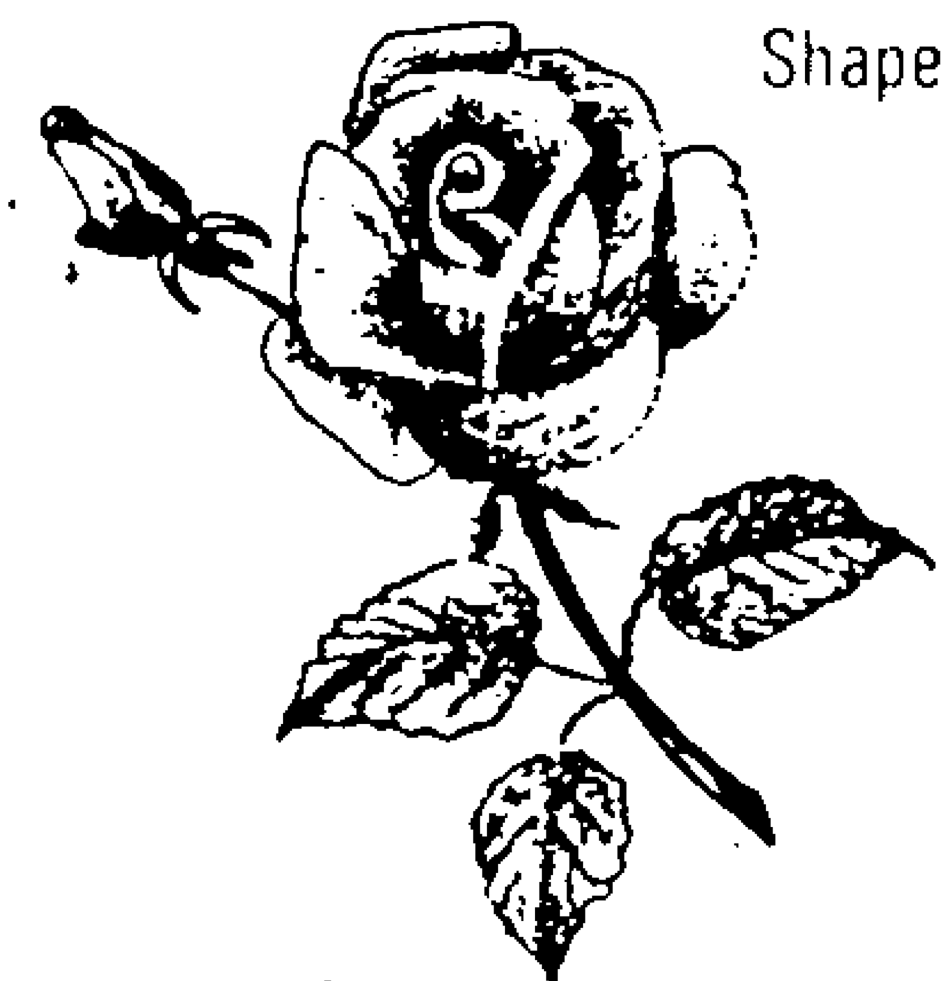


PLANTS AND THEIR SEEDS

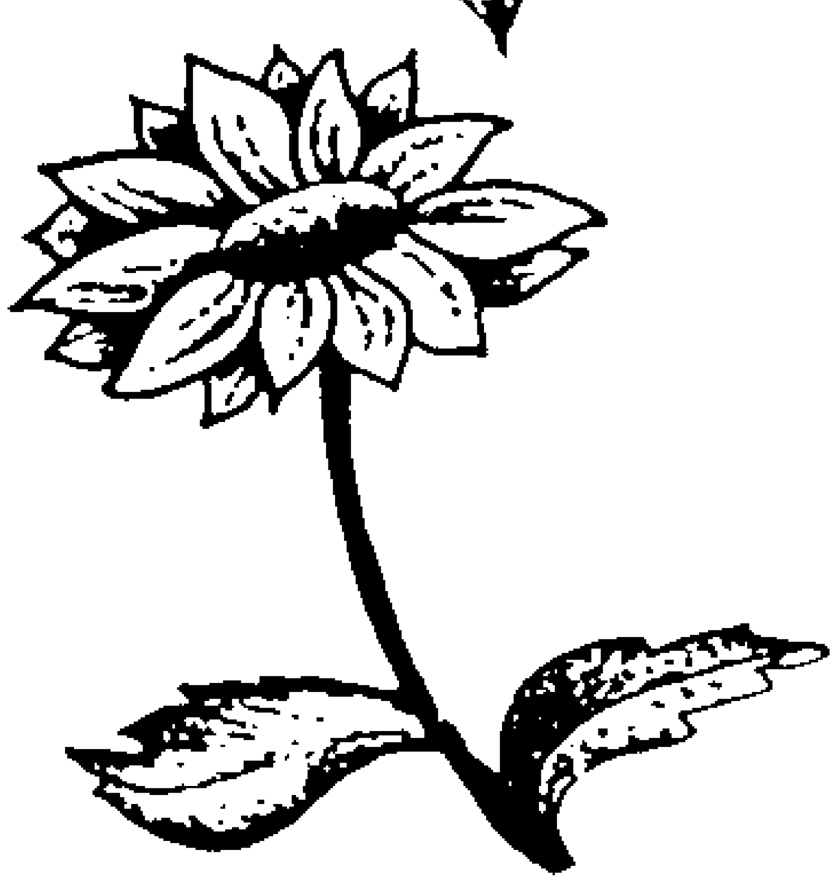
Plants produce flowers. Flowers have different shapes, sizes and colours.

FLOWERS

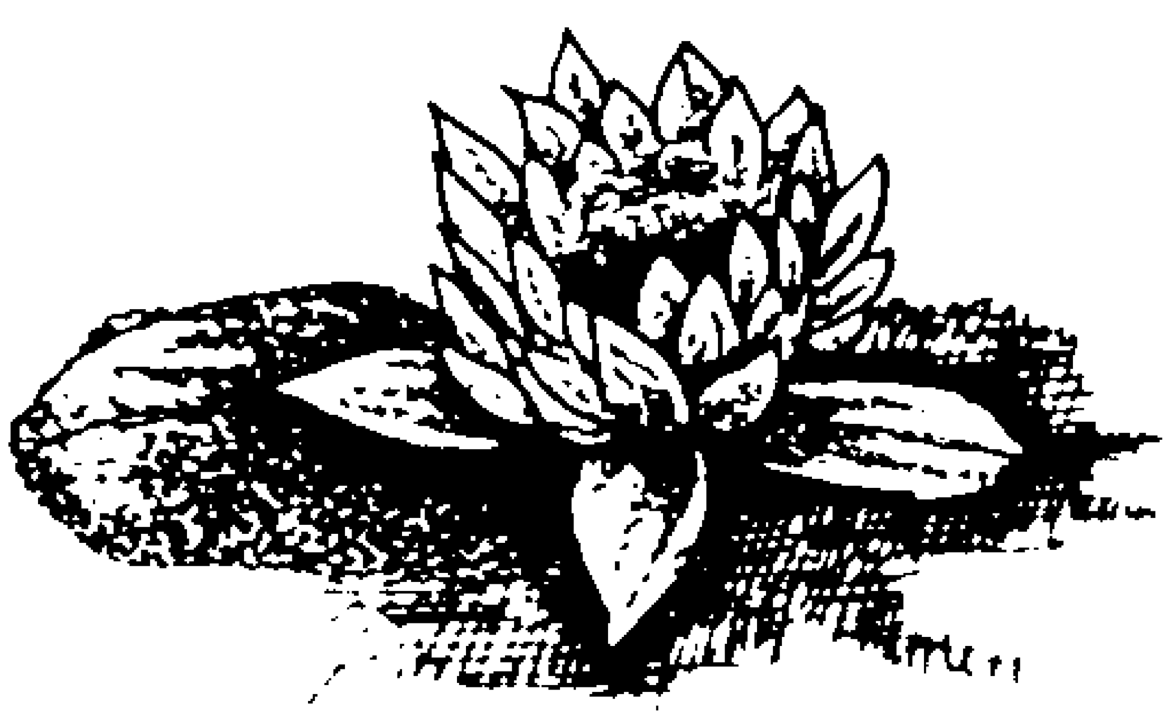
Shapes, Sizes and Colours





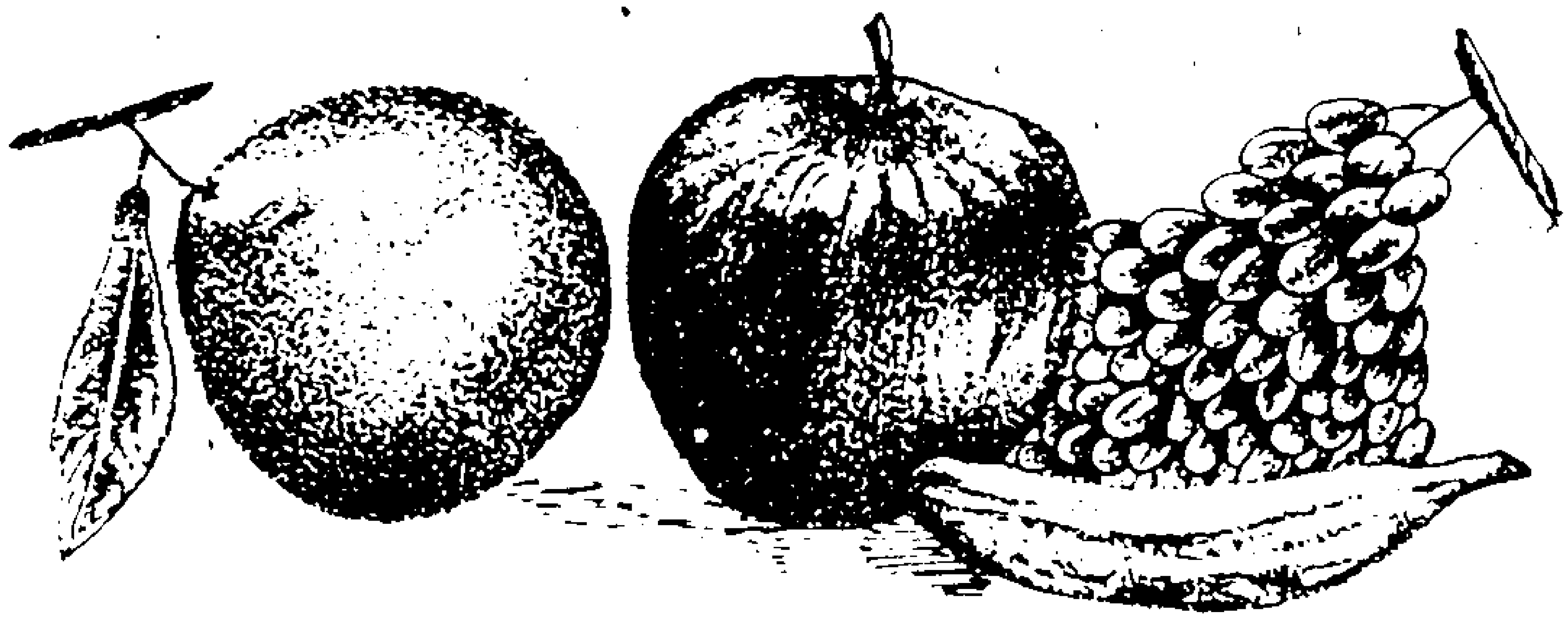




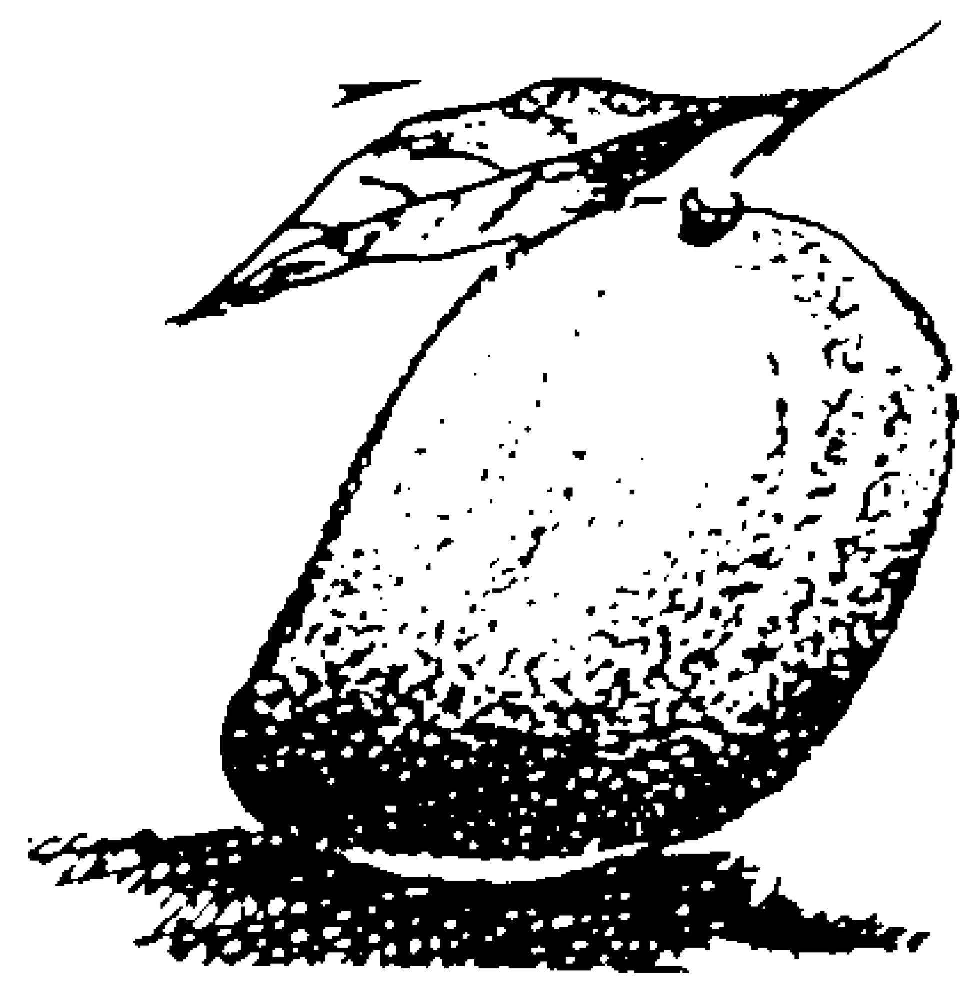




Flowers become fruits. Fruits are of many types, colours and tastes.



Fruits have seeds.

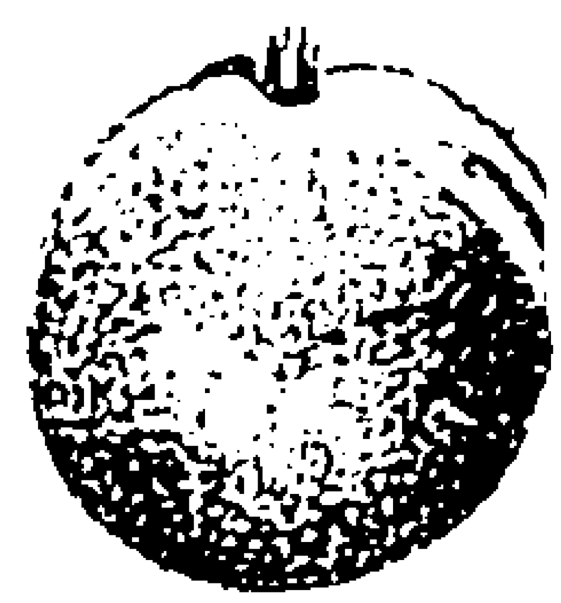


Some fruits have only one seed.

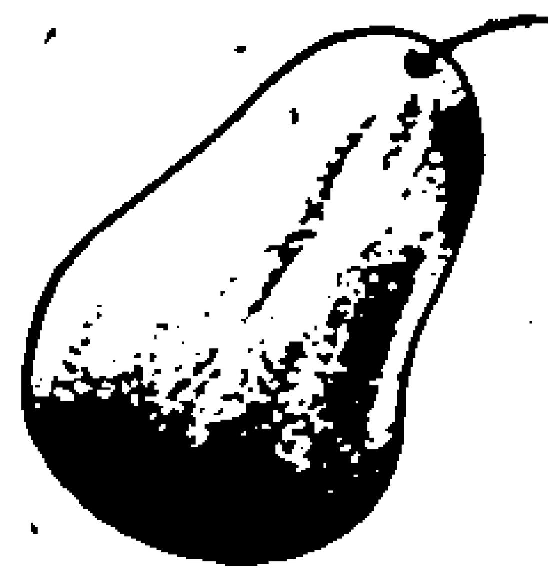
A mango has only one seed

Some fruits have a few seeds in them such as peaches, oranges and pears.

Peache has a few seeds.



Pear has a few seeds.



Some fruits have many seeds in them such as watermelon and tomato.

Tomato has may seeds.
It is used as a vegetable.



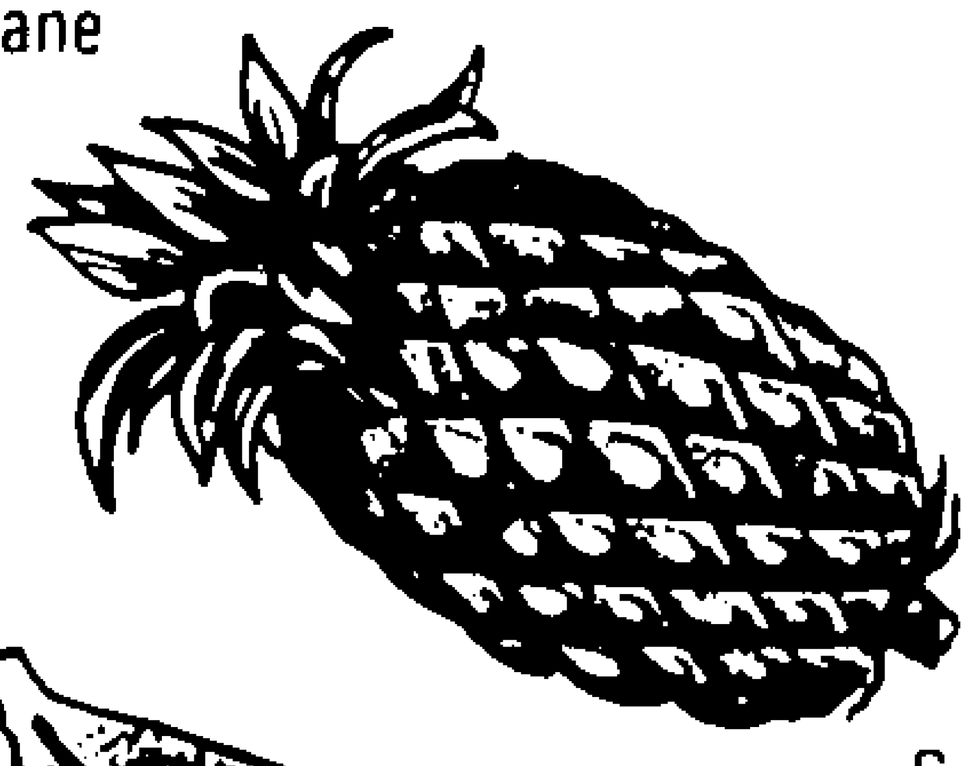
Watermelon has also many seeds. It is eaten raw.





Few plants have no seeds, such as pineapple, banana and sugarcane

Pineapple



Banana



Sugar cane





Plants have seeds of different kinds.

Seeds have different shapes. Seeds have different sizes. A mango seed is big. A mustard seed is very small. Pea seed is bigger than the Mustard's seed but smaller than the mango seed.

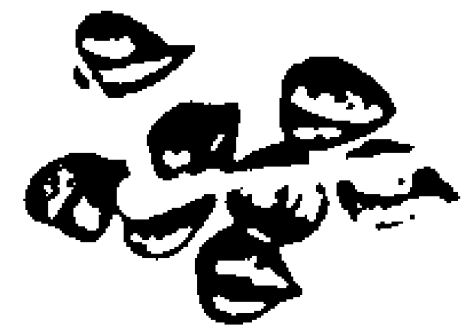




Seeds have different colours.



Pea seed is green. Mustard seed is black. Maize is white. Grain is brown. Wheat and Pin-nuts are also brown.





Vegetables

Humans and animals love to eat vegetables and fruits. We make many tasty dishes from vegetables. We cook them or eat them fresh from the garden. Animals eat them raw.

We eat all the parts of some plants. We only eat certain parts of other plants. We eat the leaves of some plants and the stems of others. We also eat some roots. All these are vegetables.

Leaf buds

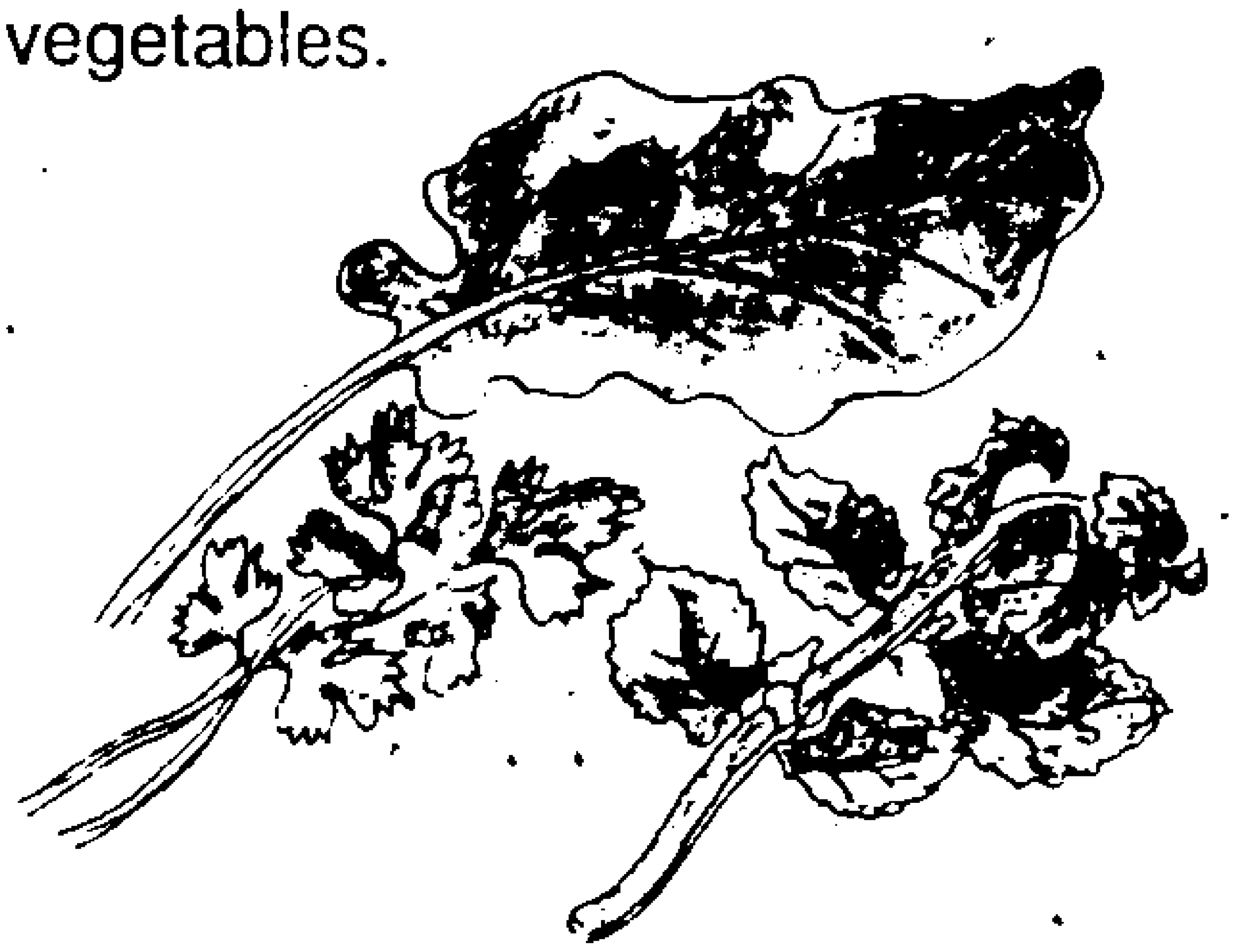
Lettuces and cabbages are really buds. These plants are grown from seeds. Almost the whole of the plant is made up of a bud. Each bud contains many leaves.





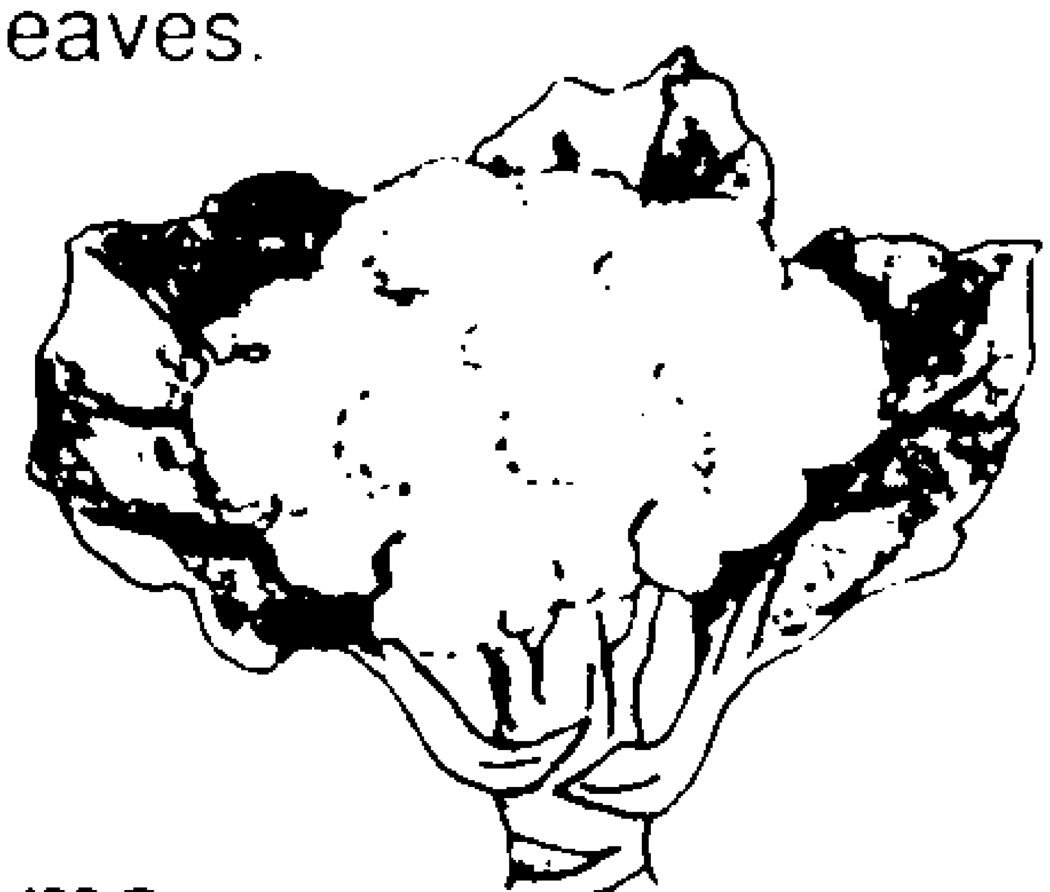
Leaves

Some vegetables are leaves. Parsley, spinach and chives are leaf vegetables.



Flower buds

Cauliflower and globe artichokes are flower buds. You have probably seen a cauliflower. The white part is the vegetable. This is surrounded by leaves.



Stems

Some stems grow underground. Underground stems are also called **tubers**. Potatoes, ginger and sweet potatoes are stems which grow underground.



Celery is also a stem. It is called a leaf stalk.

Stems which grow above the ground can be hollow or solid, round or square, rough, or smooth. Some grow along the ground and others are stiff and stand up. The sugarcane plant has a stiff stem.



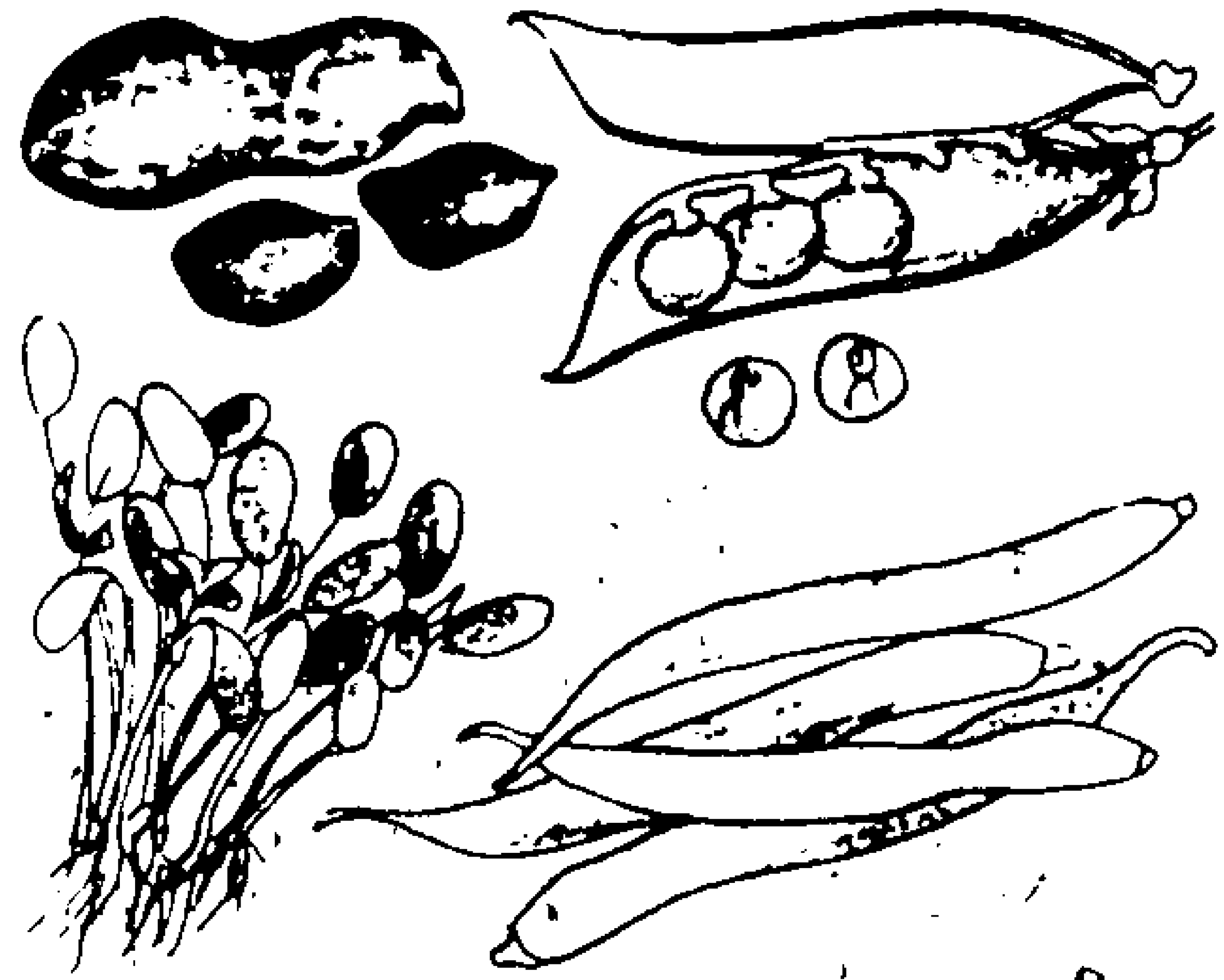
Roots

Carrots, turnips and radishes are swollen roots. They are roots which store food.



Seeds

Broad beans and peas are seeds. They grow in pods above the ground. Some seeds grow in shells underground, like the groundnut (peanut).



Seedlings

Some plants are very small. The whole plant makes up the vegetable. Cress, mustard and bean sprouts are seedlings.

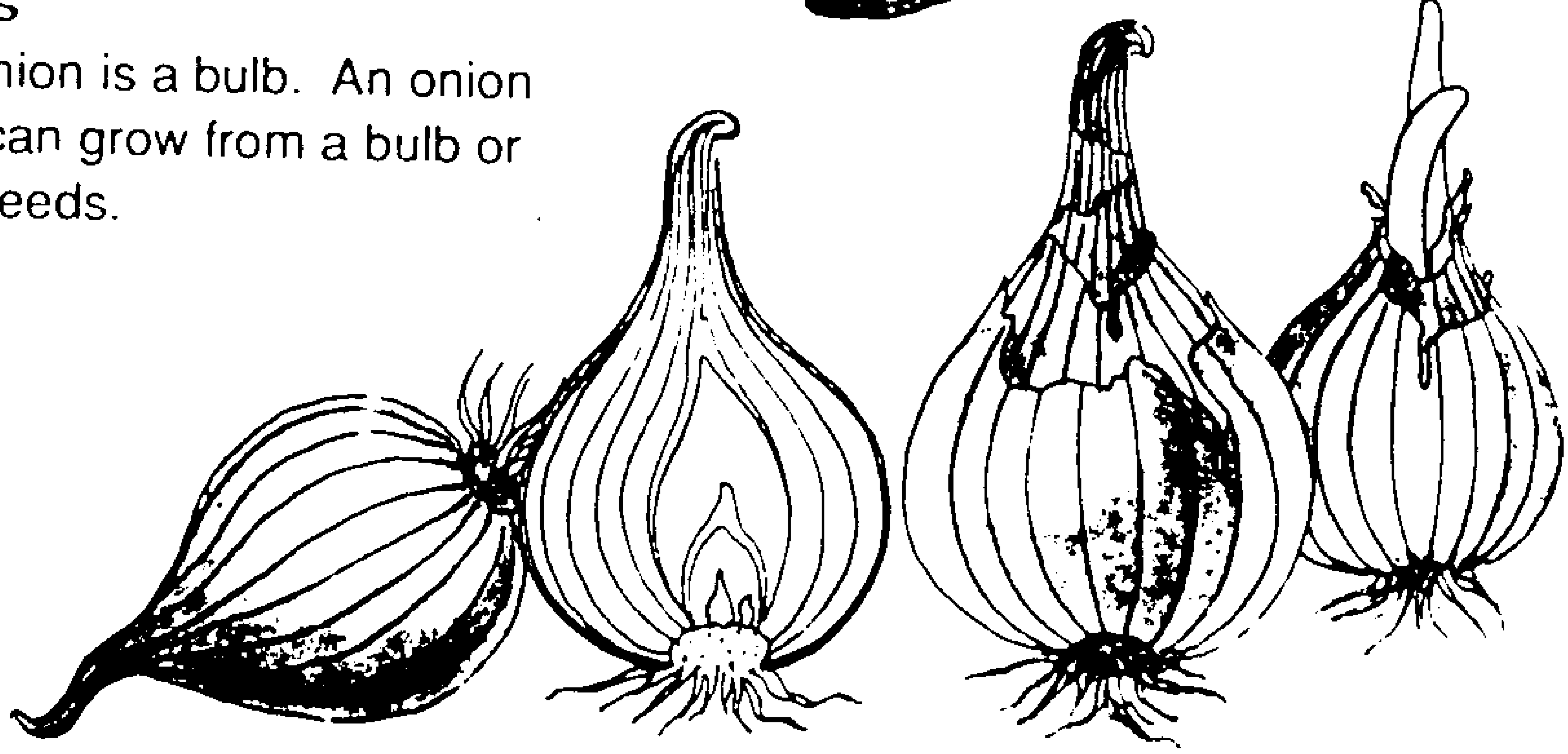
Fruits

Some vegetables are really fruits. The tomato is a fruit. The chilli is a fruit too.



Bulbs

The onion is a bulb. An onion plant can grow from a bulb or from seeds.



Questions

A *You can find the answers to these questions in the text:*

1 What kind of vegetable is a carrot?

2 Which parts of plants are used as food?

3 What are tubers?

4 What do stems look like?

5 Is the tomato a fruit?

THE MAGNET

Magnets are very useful things. Some magnets are very powerful. Other magnets are weak. Without magnetism we would have no tape recorders or cassette players, no telephones, no televisions and no computers. All these **electronic** machines use magnetism in some way.



If you put your nose close to a flower, you may be able to smell it. If you stand back from the flower, the smell is less strong. If you move away from the flower, you won't smell it at all.

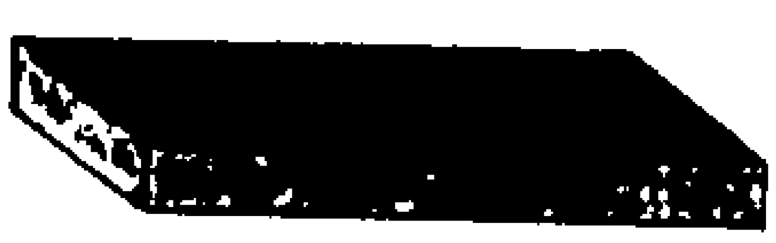


An object can be pulled towards a magnet if the magnet is very close. As the distance between the magnet and the object increases, the magnetic power becomes weaker. We say its **field** gets weaker.

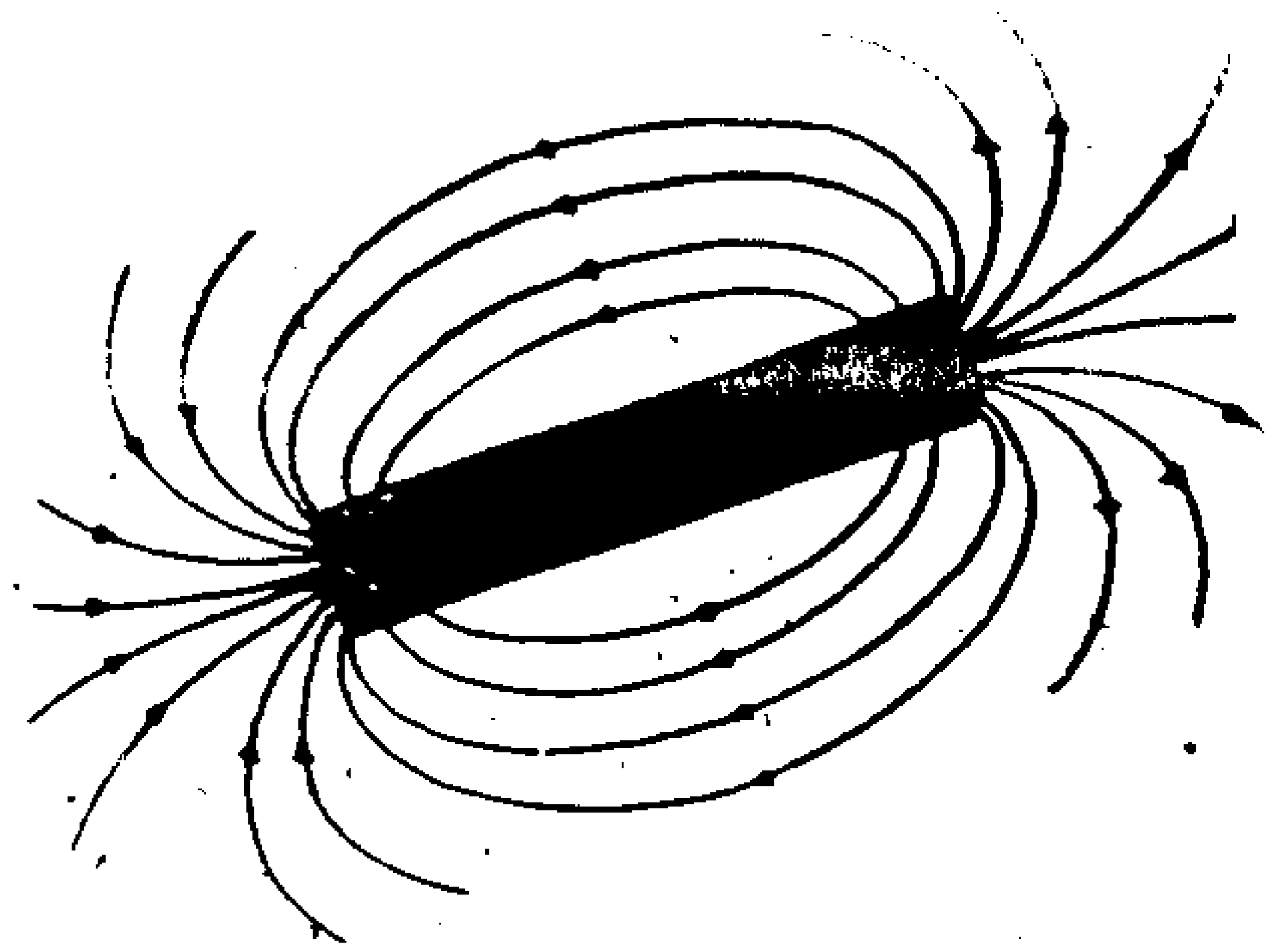


A strong magnet can lift a car.

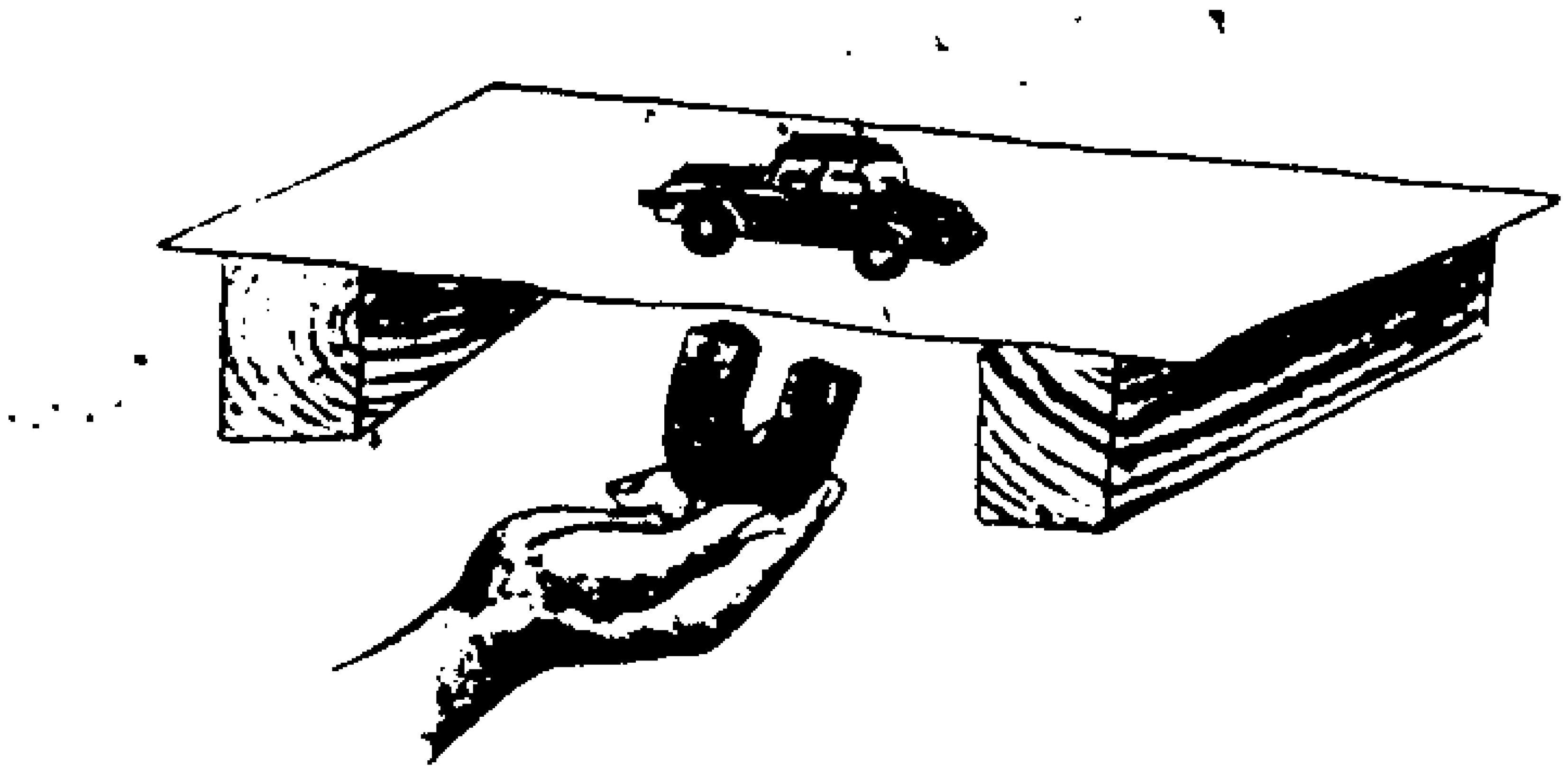


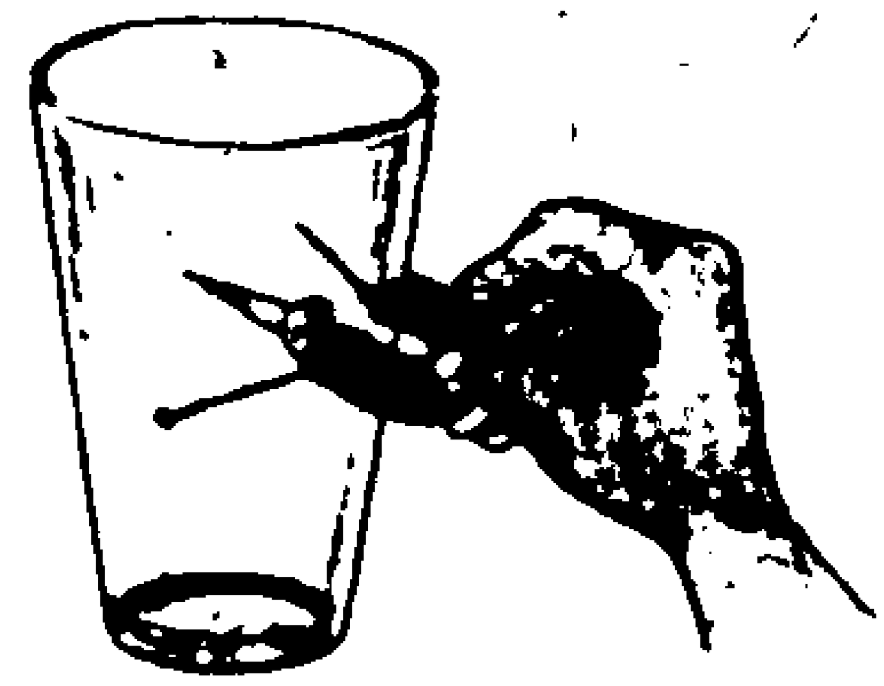


The [illegible]
invisible force around a magnet.
We can show the lines of force like
this.



A magnetic field can go through some materials. What can you see in the pictures? Try these experiments yourself.

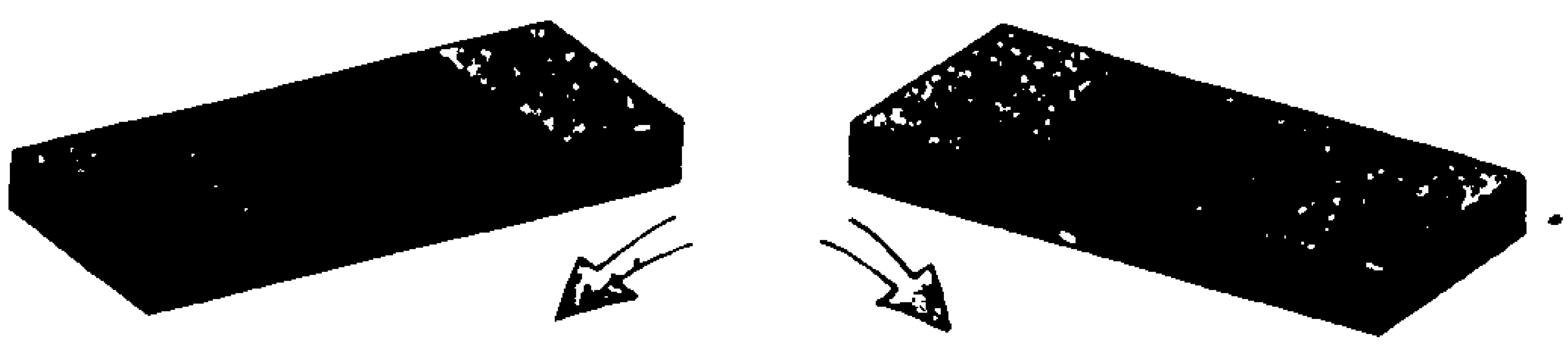




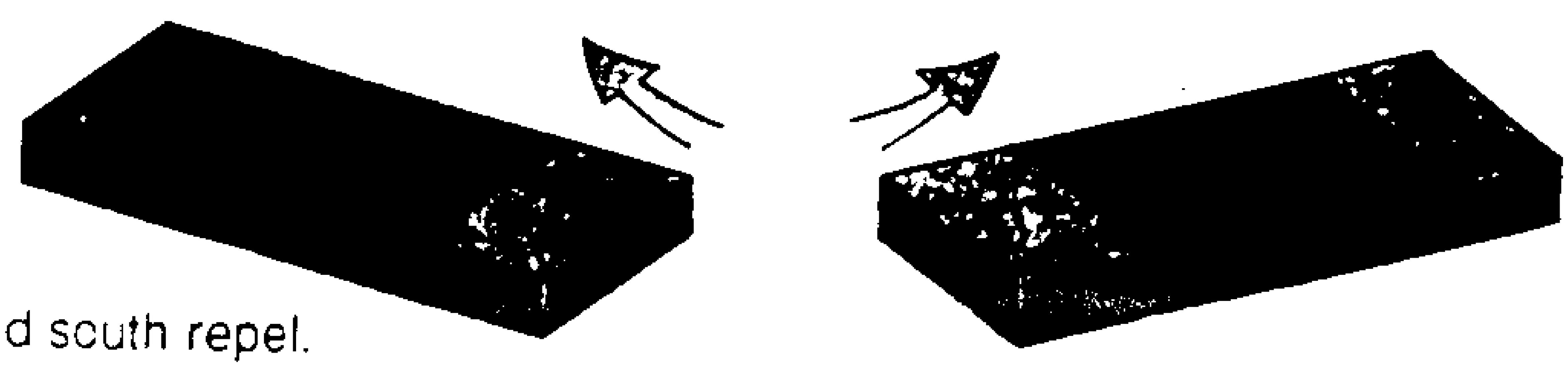
Most magnets have two **poles.** These are the places where the magnetism is the strongest. They are usually at the ends of the magnet. They are called the north and south poles, and are often marked in some way.

Take two magnets and try to put the two north poles together. What happens? They push each other apart. Try putting the two south poles together. They too push each other apart. We say they **repel** each other.

Two **like** poles repel each other.



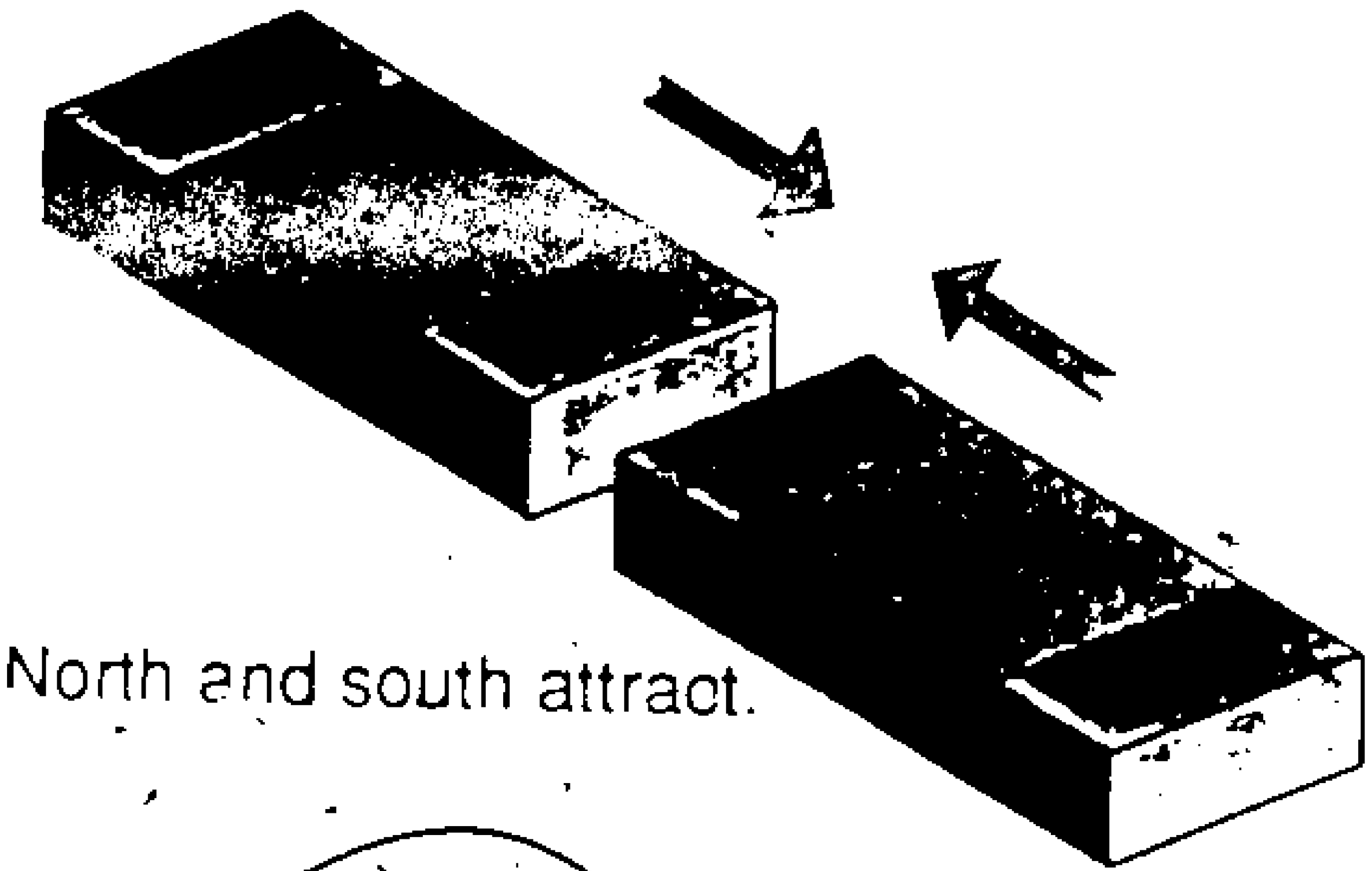
North and north repel.



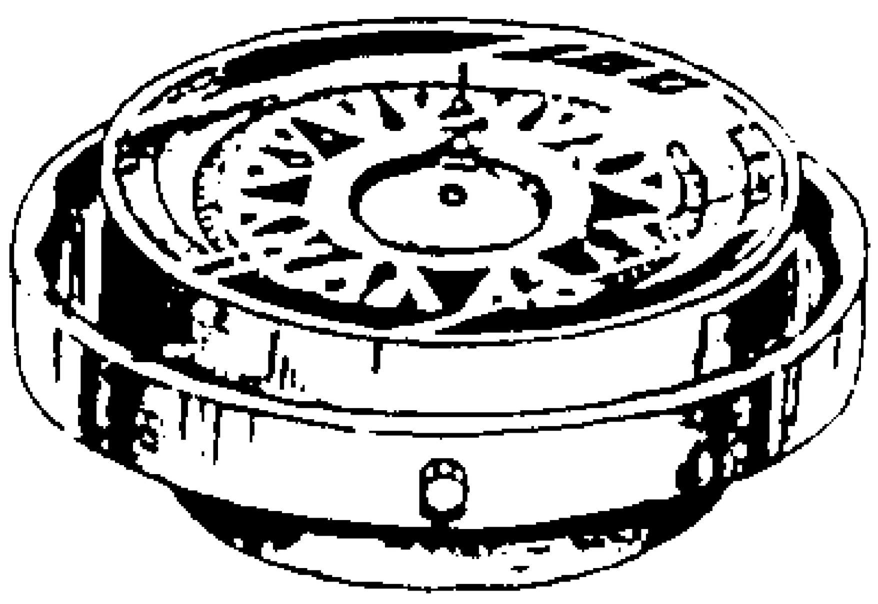
th and south repel.

unlike poles, one north and south, attract each other.

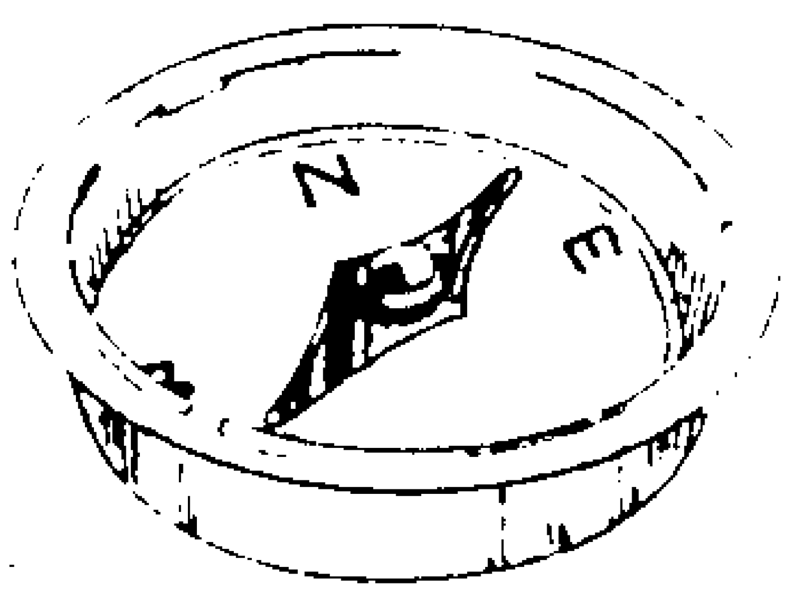
earth behaves like a very big net. It also has two magnetic s: The earth has its own netic field. This is why a pass, which is really a magnet, always point to the North and h Poles.



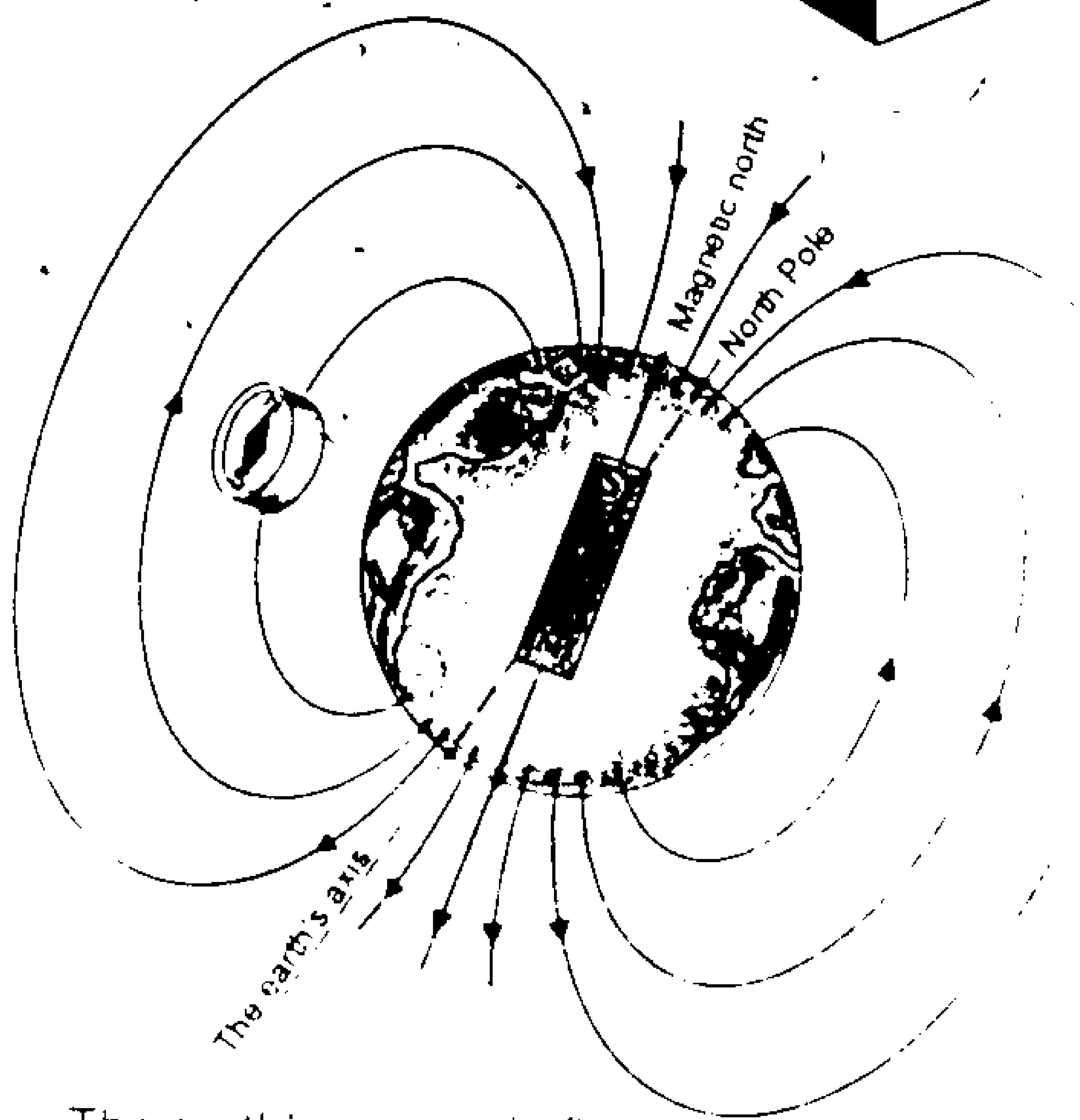
North and south attract.



ip's compass



A plotting compass.



The earth's magnetic field.

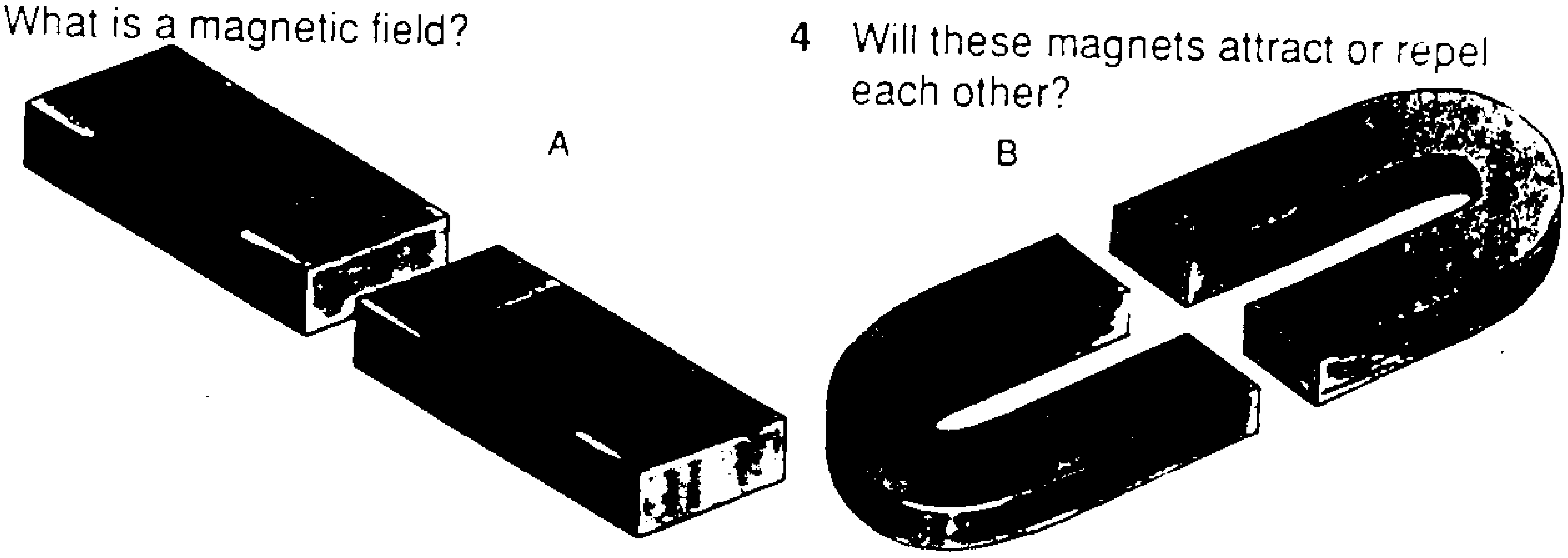
Questions

1 How many poles does a magnet have? What are they called?

2 What is a magnetic field?

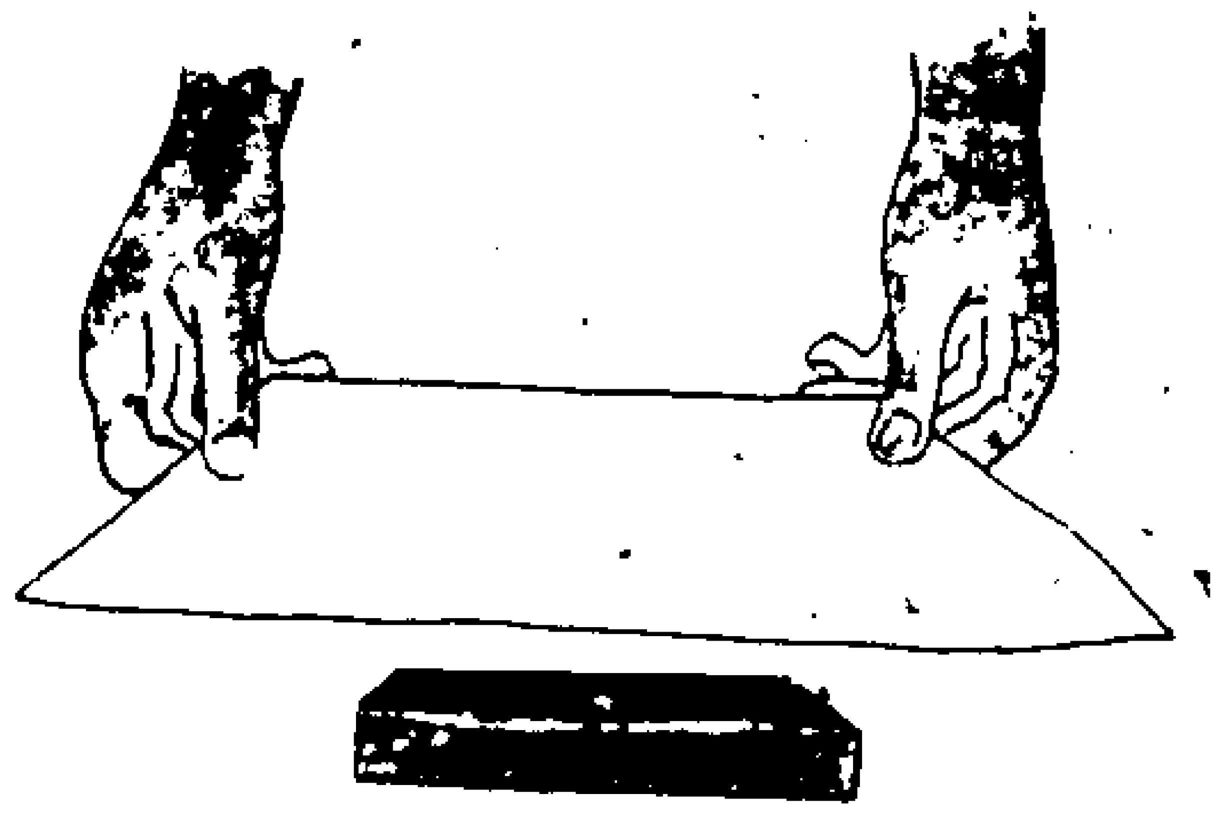
3 What electronic machines use magnetism to work?

4 Will these magnets attract or repel each other?

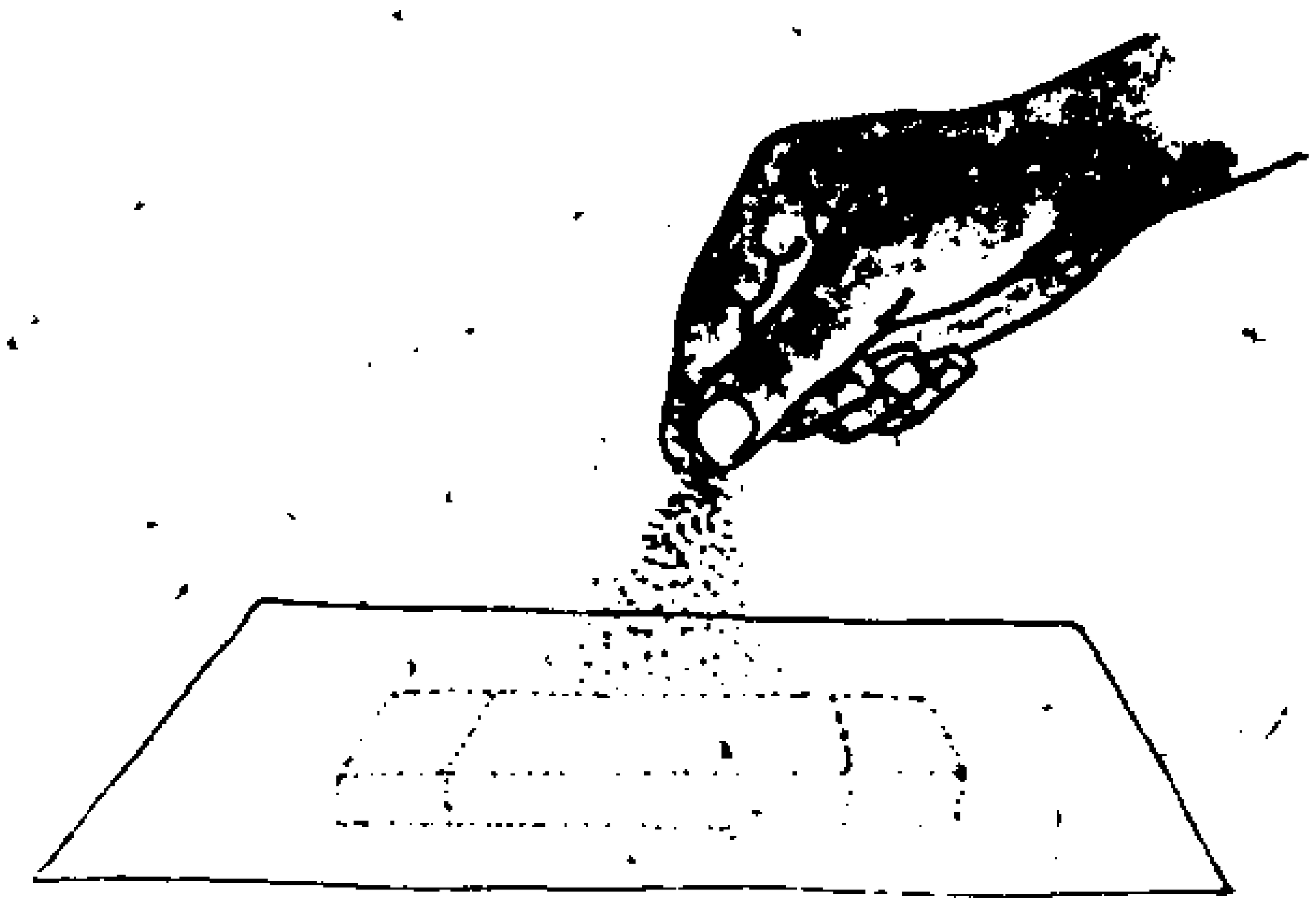


Things to do

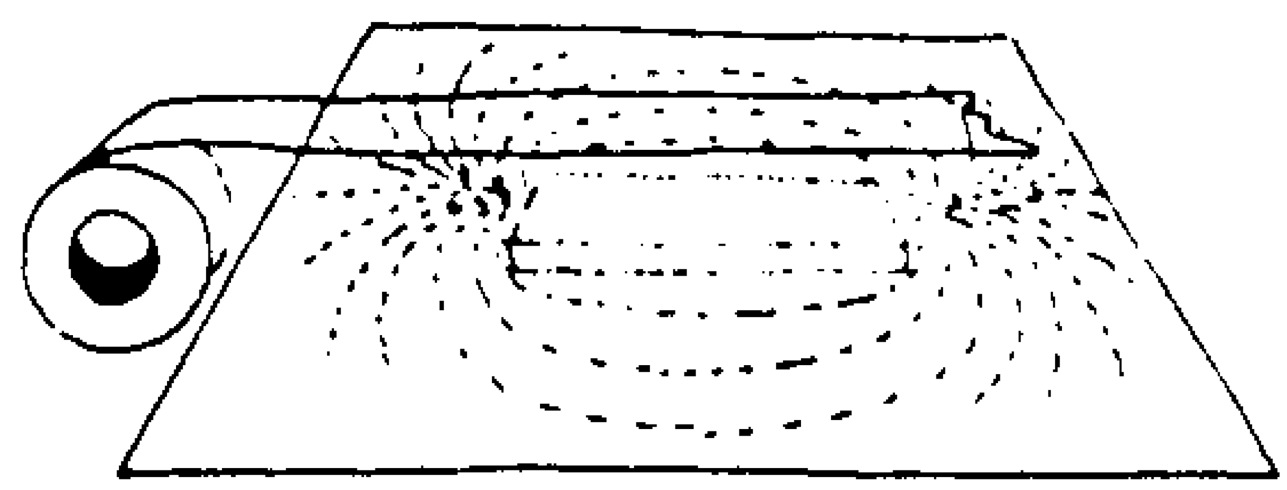
1 You can see the lines of force made by a magnetic field.



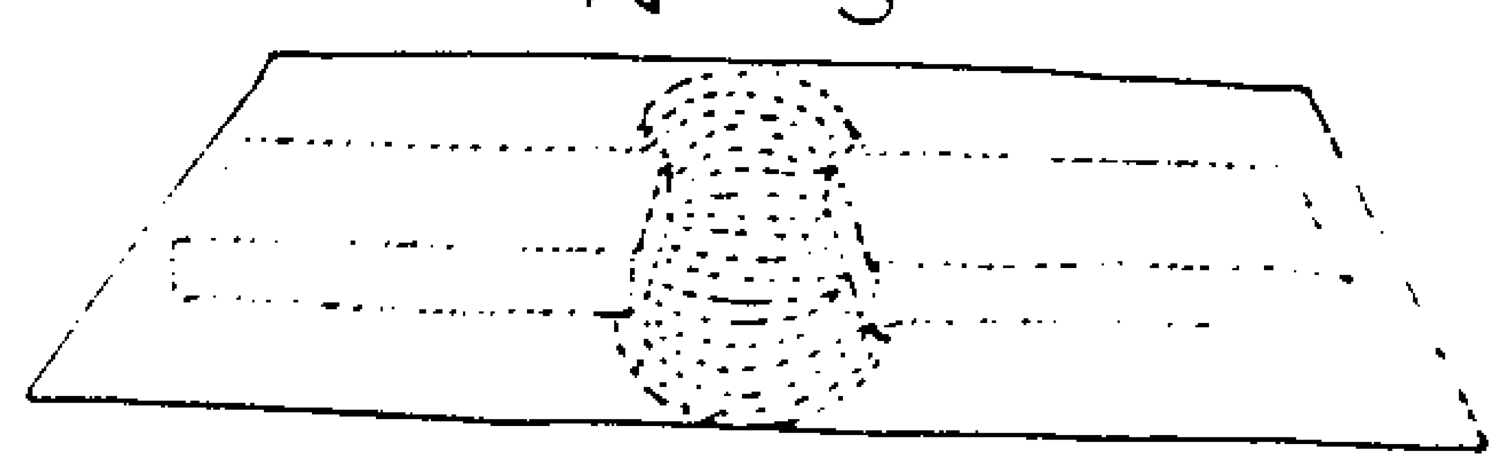
a) Place a sheet of stiff paper over a bar magnet.



b) Pour some iron filings on to the paper. Tap the paper gently.



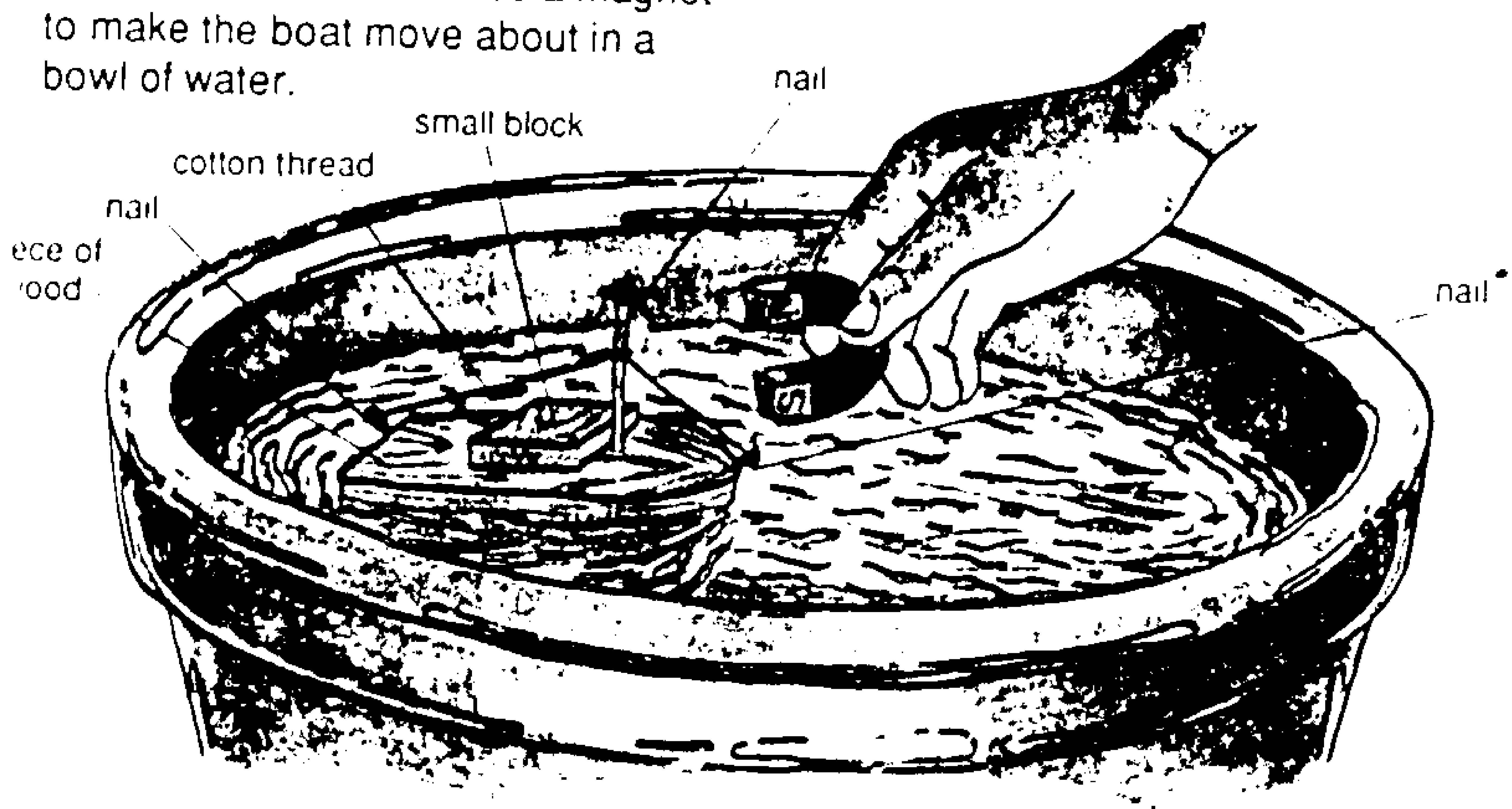
c) Carefully put some sticky tape.



d) Try using two magnets.

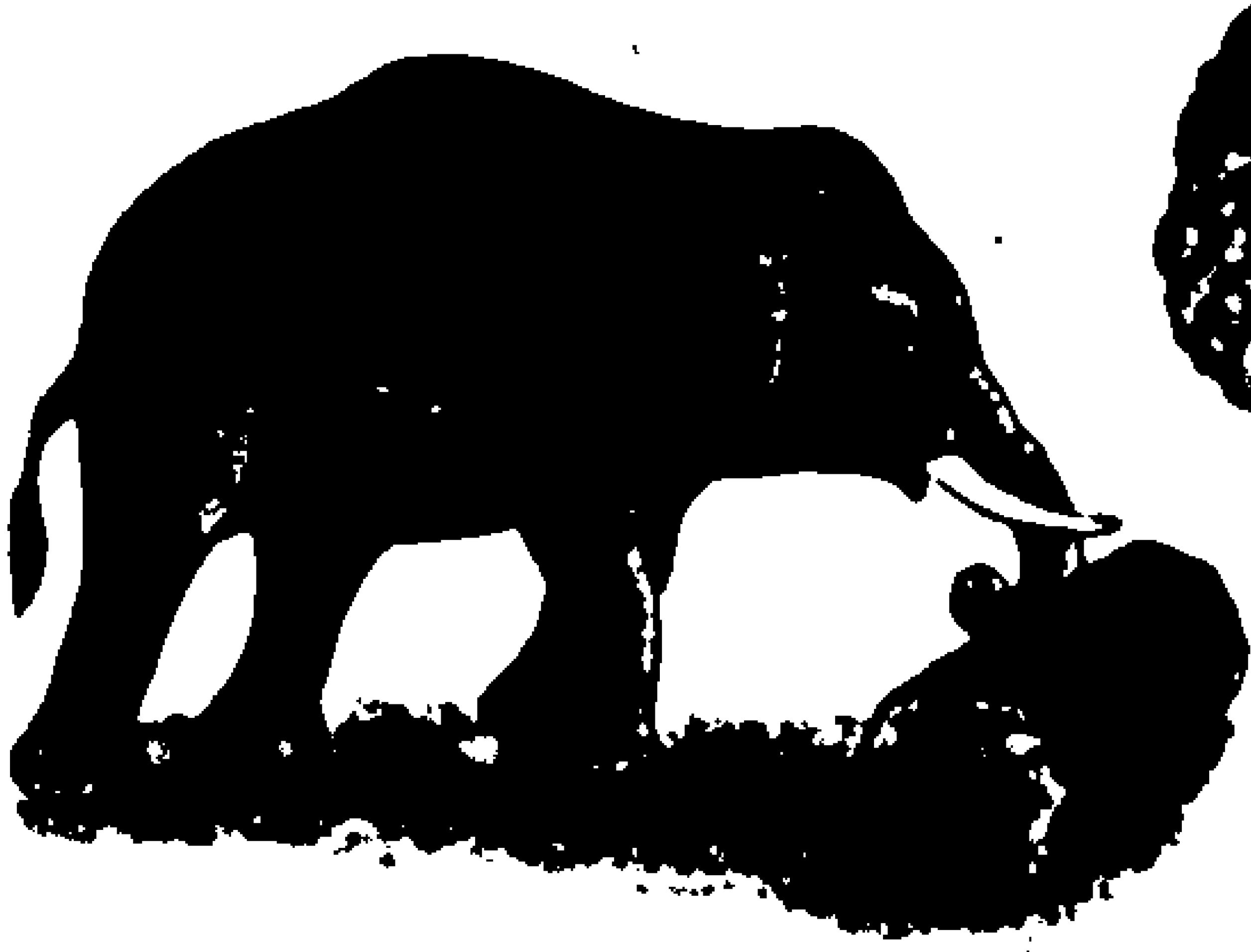
You can ask your teacher how to make some iron filings.

2 Make a boat like this. Use a magnet to make the boat move about in a bowl of water.



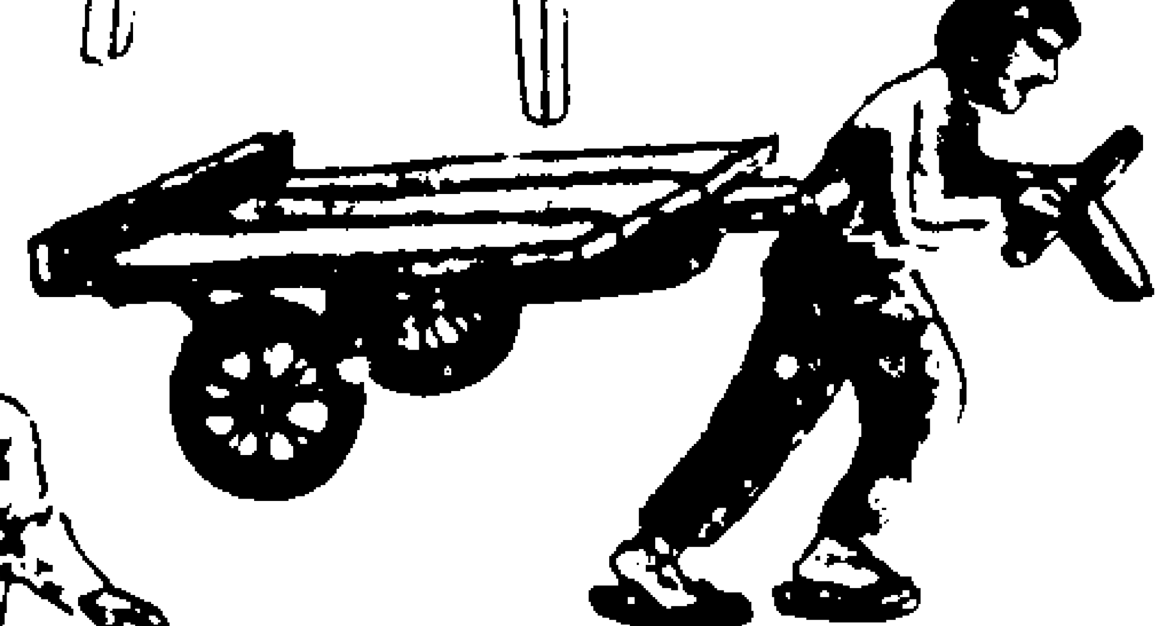
PUSHING AND PULLING

Do you remember reading about pushes and pulls? Pushes and pulls are called forces. Look at the pictures.













Which things are pushing?
Which are being pushed?
Which things are pulling?
Which are being pulled?



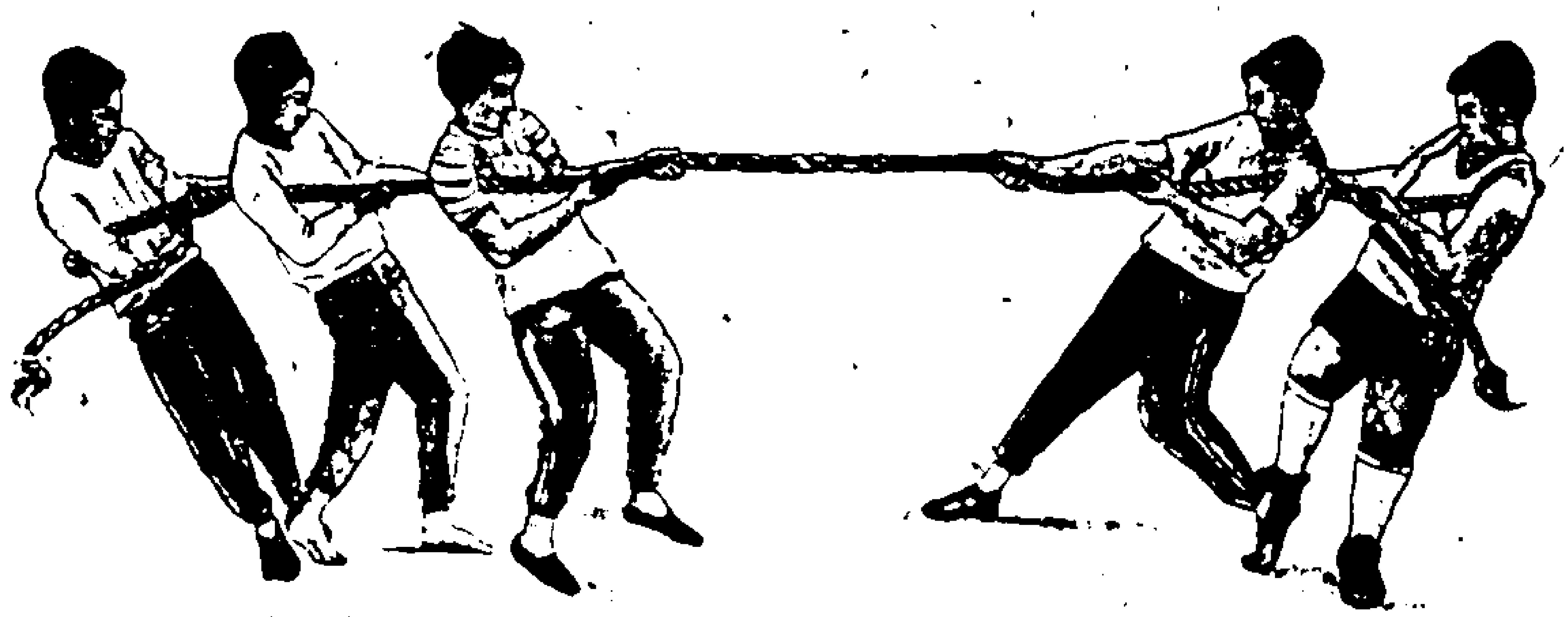
There are forces acting all around us. Some forces are bigger than others. For example, the force of a breeze will make a flag flutter. The force of a gale can knock over a tree!

By using forces, things can be moved, turned or stopped. Things can be made to go faster or slower.

1 If you push or pull the following things, will they move?

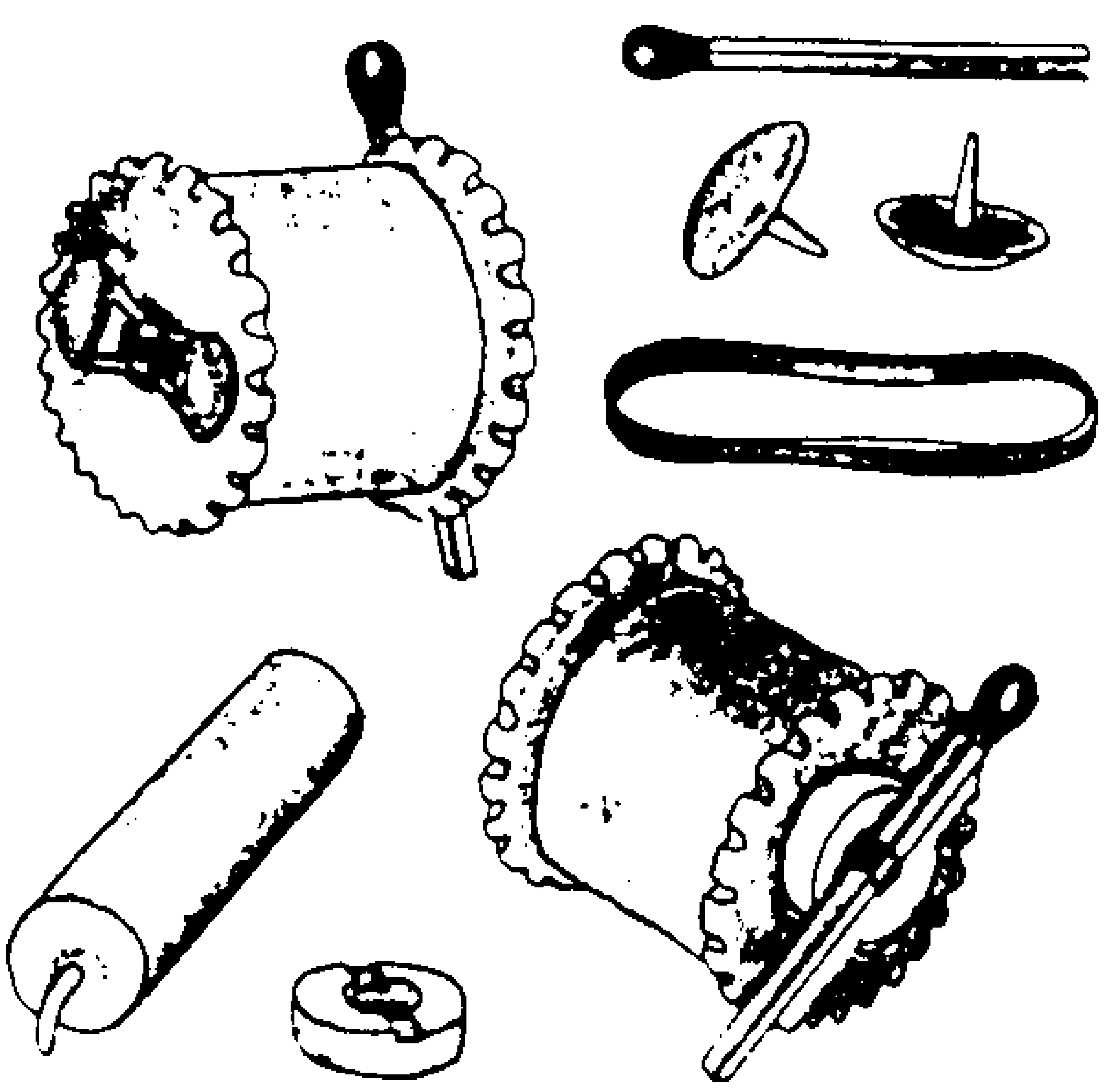
a) a rubber b) your brother or sister
c) a car d) a tree e) a house f) a ball.
g) a box which weighs 1000 kgs

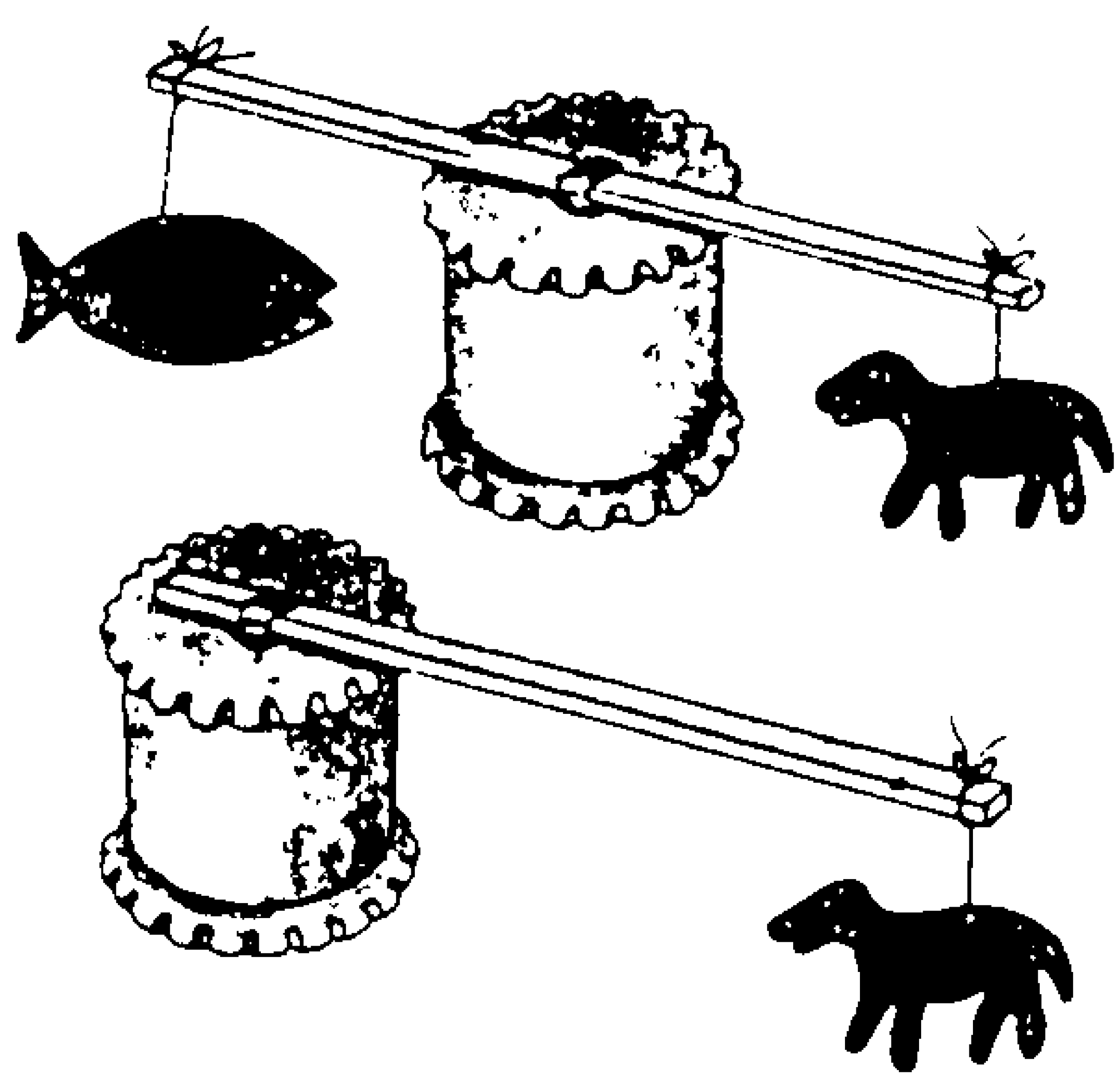
2 Which team is likely to win this tug of war contest? Why?



Things to do

1 In Unit 20 you read about **energy**. In this machine the energy is produced by the rubber band. The rubber band **forces** the cotton reel forward. The cotton reel will even climb a slope.

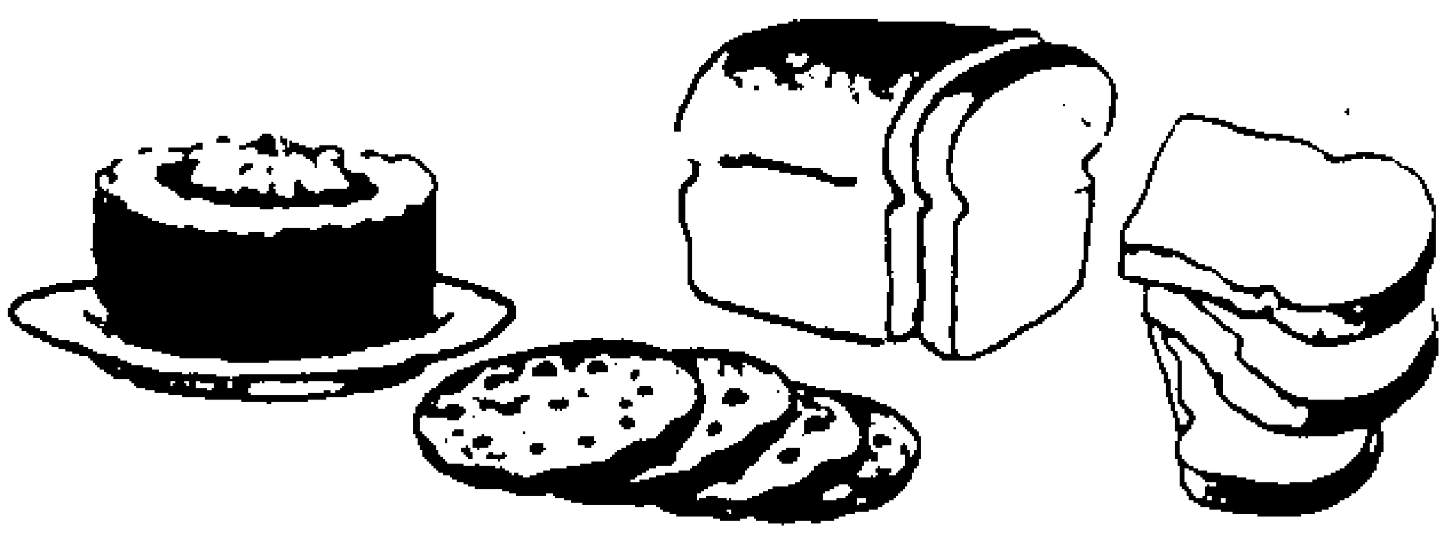




2 Use the same materials as you did in the first experiment. This time use a longer stick and a piece of plasticine. Make a small model out of card, and tie it to the end. You could make two models. Set the model up as shown in the illustrations.

ENERGY SOURCES

ɘ all need **energy** to do work. We ɜt our energy from eating **food**. nimals too get their energy from ;ating plants and other animals. Ͻan you remember how plants get their energy? What kind of foods do plants need?



We get our energy from food.

Everything that works or moves needs some kind of energy. Even nachines need energy. Usually, nachines get their energy from **uels**. They do not need food as ve do!



Plants get their energy from the soil and the sun.

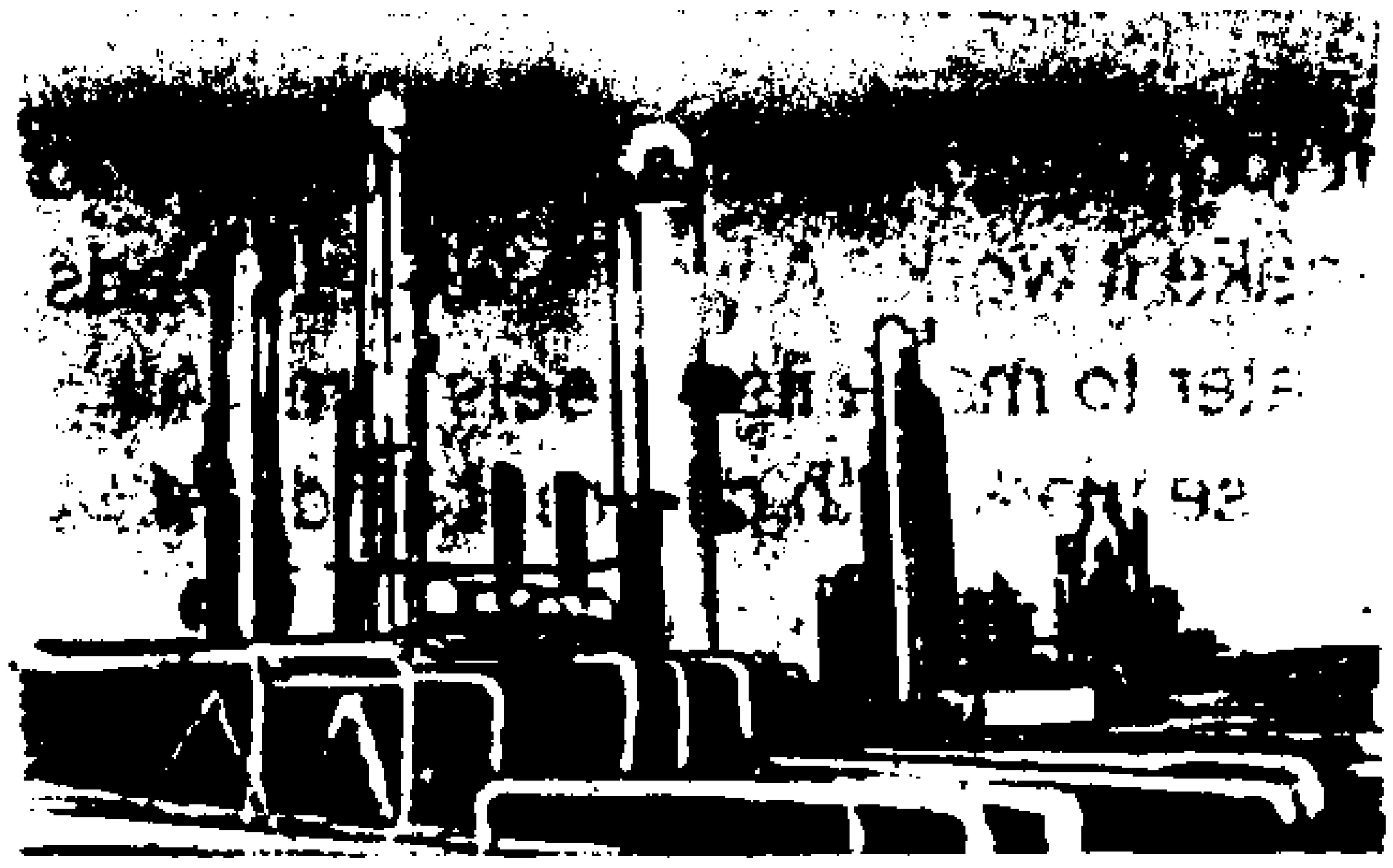
An aeroplane needs fuel to fly. A lamp needs kerosene to make it give light. A fire neds coal or wood to burn. All these things need fuels.



ıels make things work.

Coal, oil and gas are all fuels. They are used to provide energy. They are called **resources**. We get them from the earth.

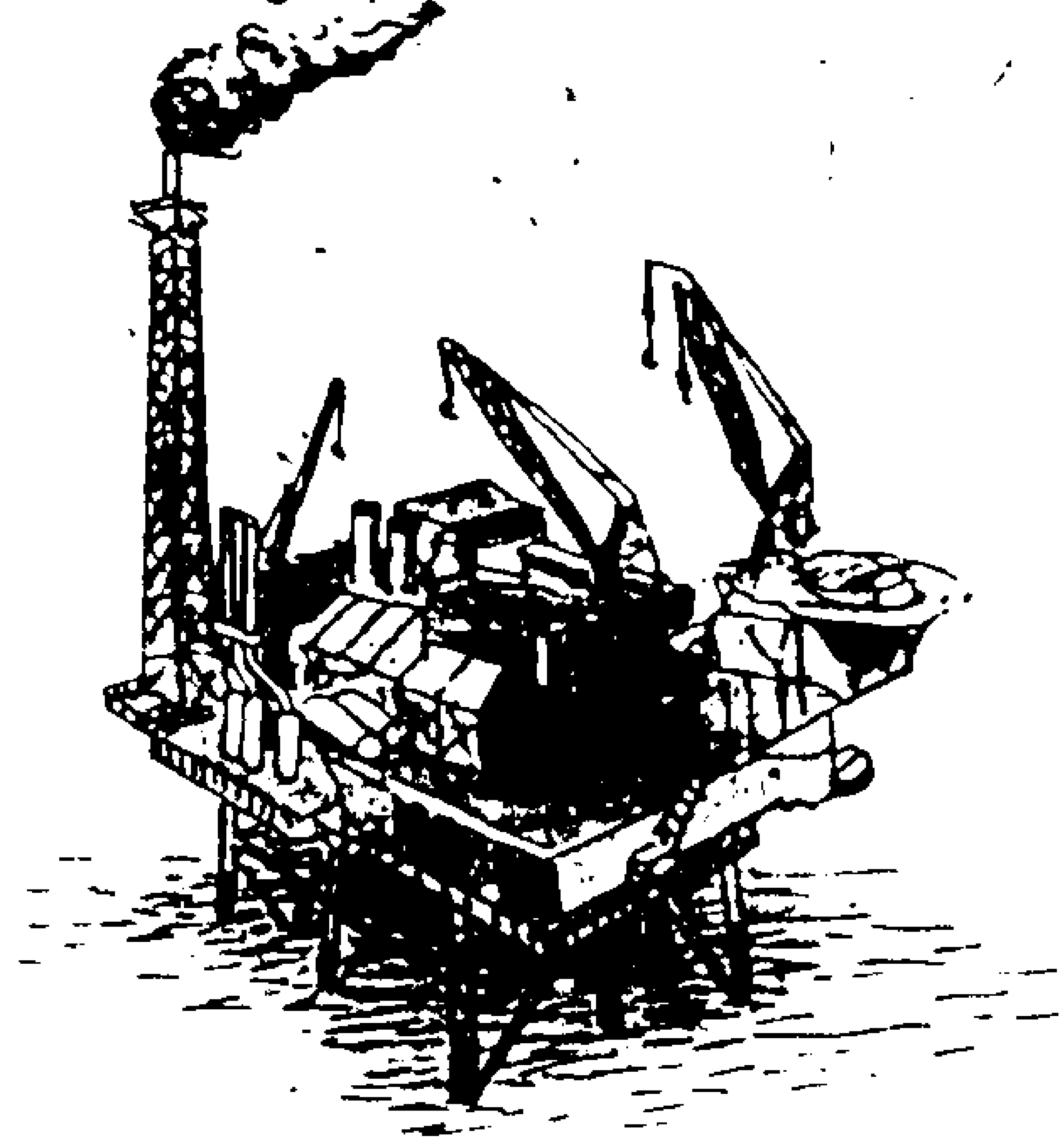
How do we get these resources out of the earth? Look at the pictures and see if you can tell.



A natural gas plant.



\ coal mine.



An oil rig.

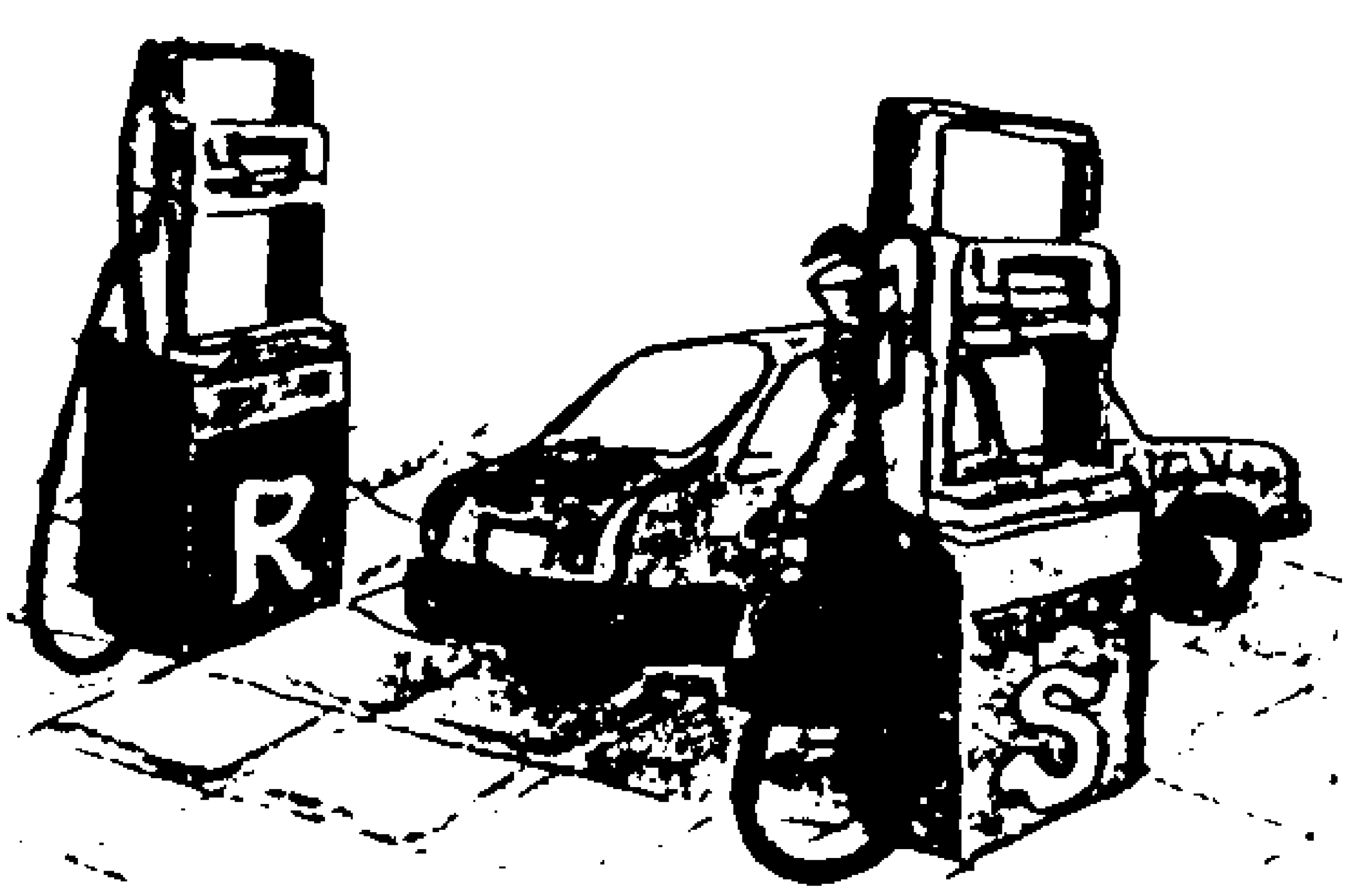
'hat do we need these fuels for?

oal is used for burning in fires. 'om coal we can make fertilizers, ks, paint, plastic, dyes, tar, nylon ıd chemicals. It is even used to ake perfumes!

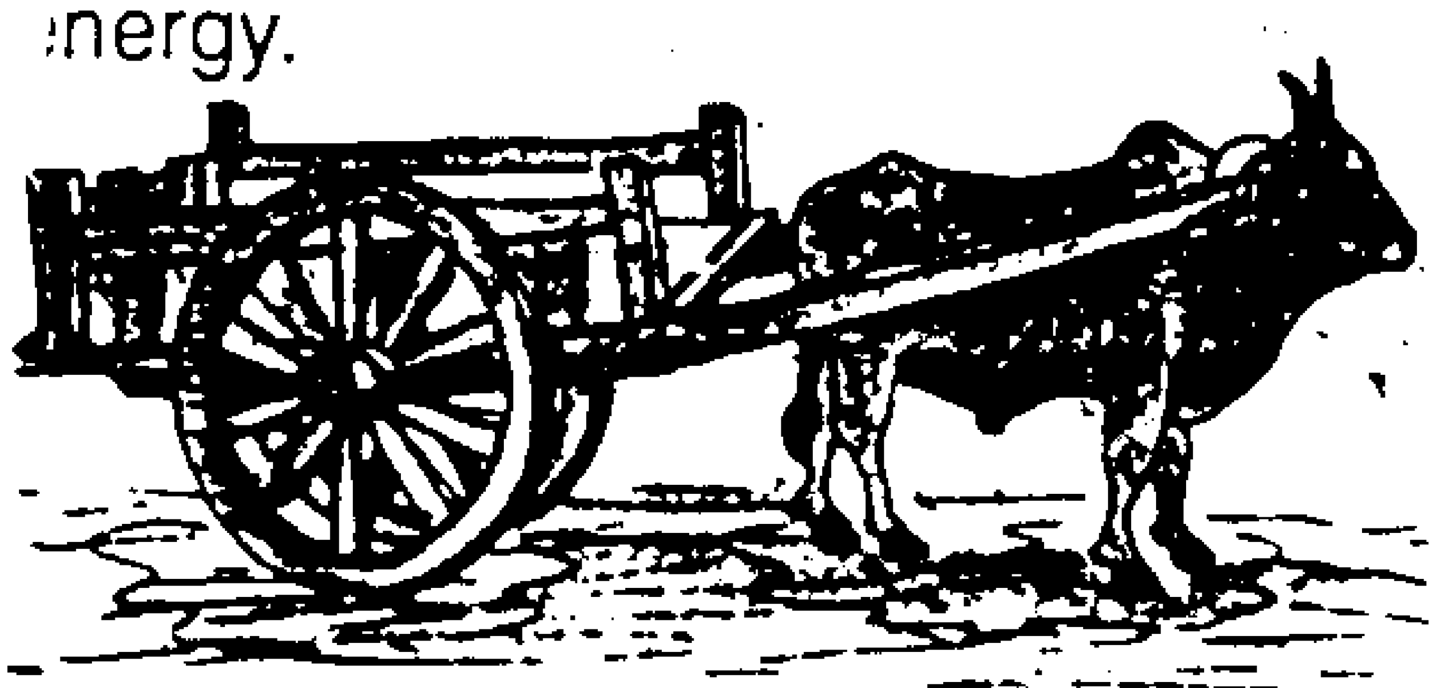
il is **refined** (made pure) in an oil .finery. We need oil for cars, 'rcraft and ships. We use it in ɔwer stations to make electricity.

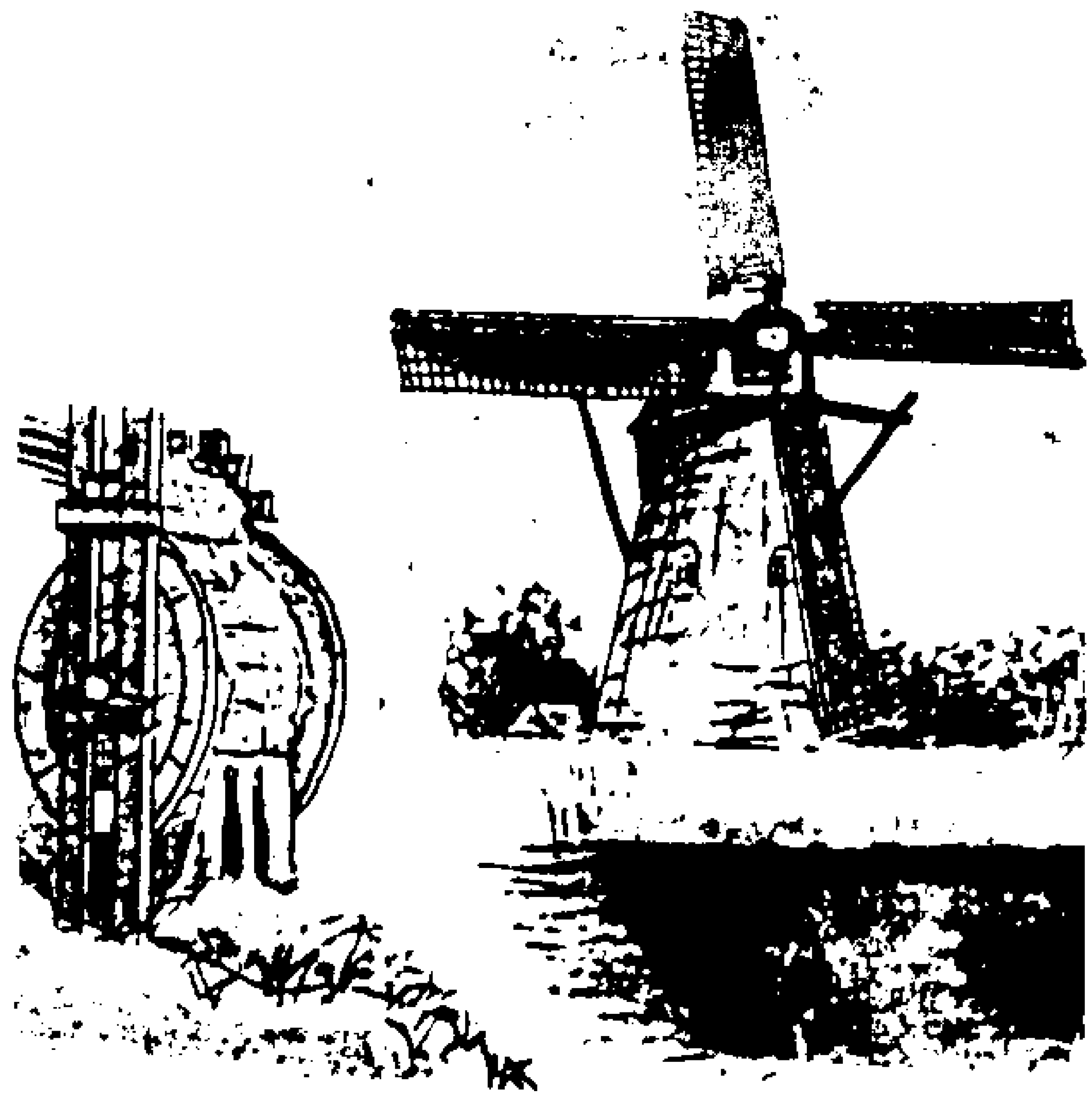
'e use gas for heating, lighting and ır making machines work.



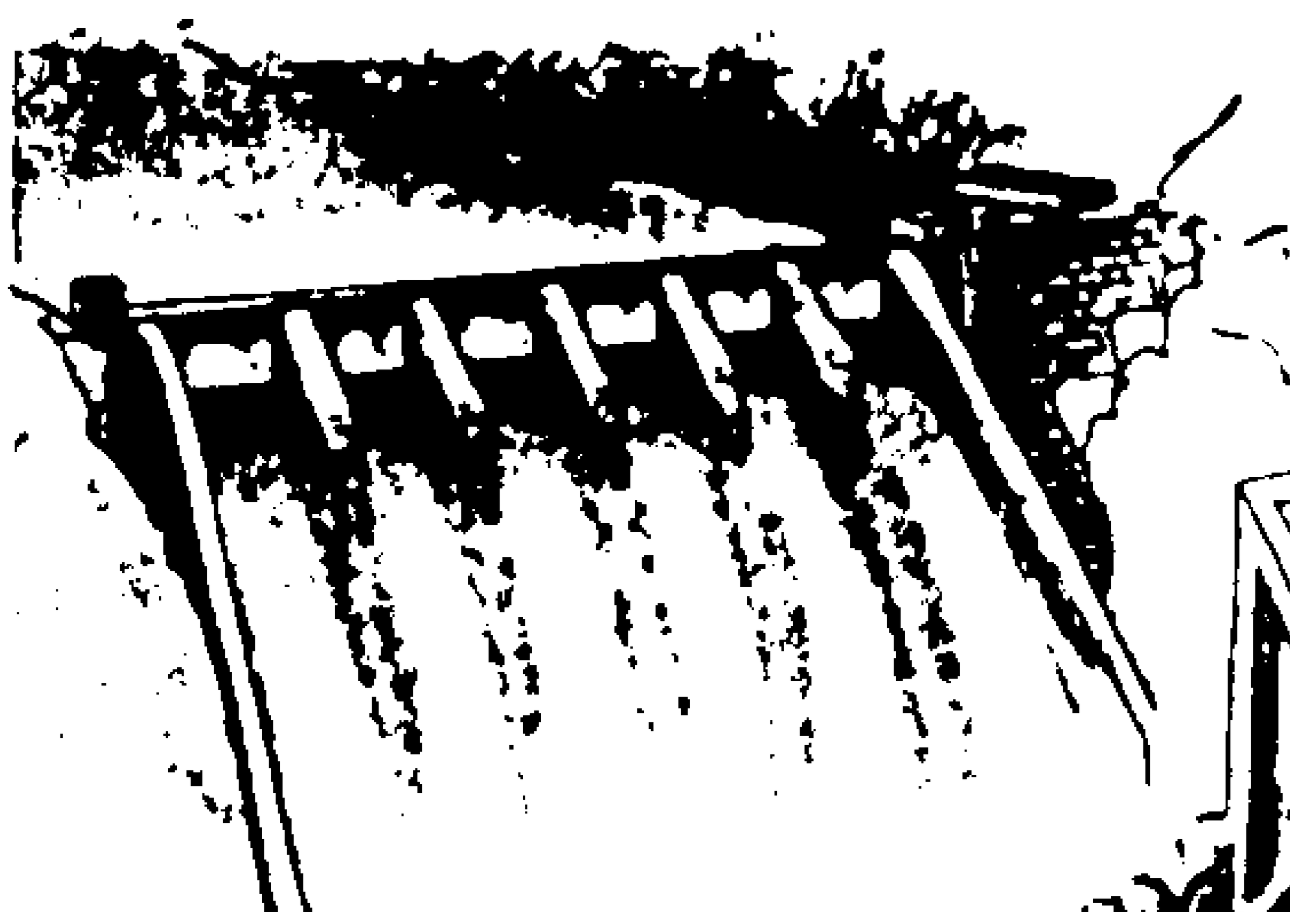


A bullock cart needs bullocks to pull t forward. A windmill needs wind to nake it work. A water-wheel needs vater to make its wheels turn. All hese work with different kinds of energy.

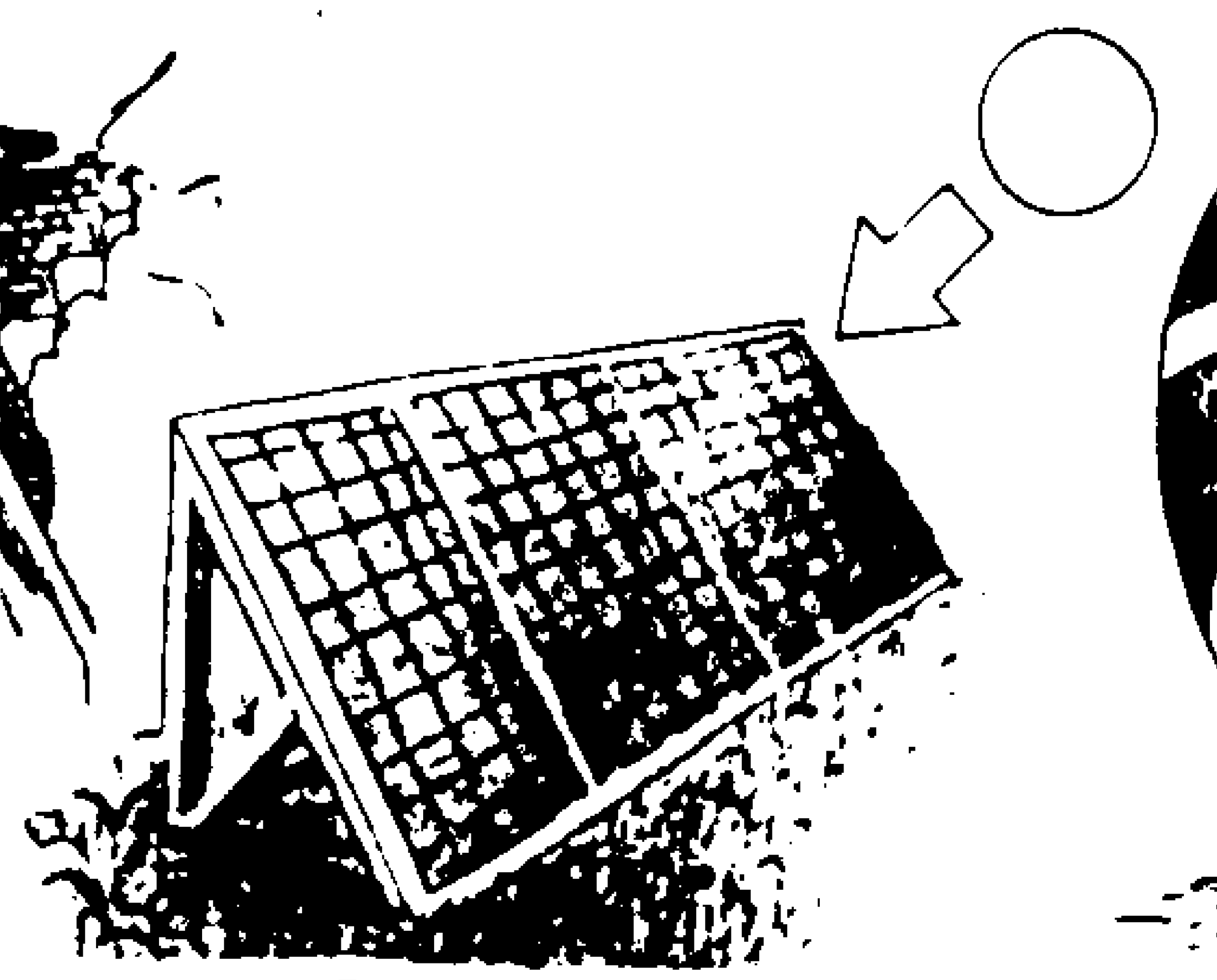




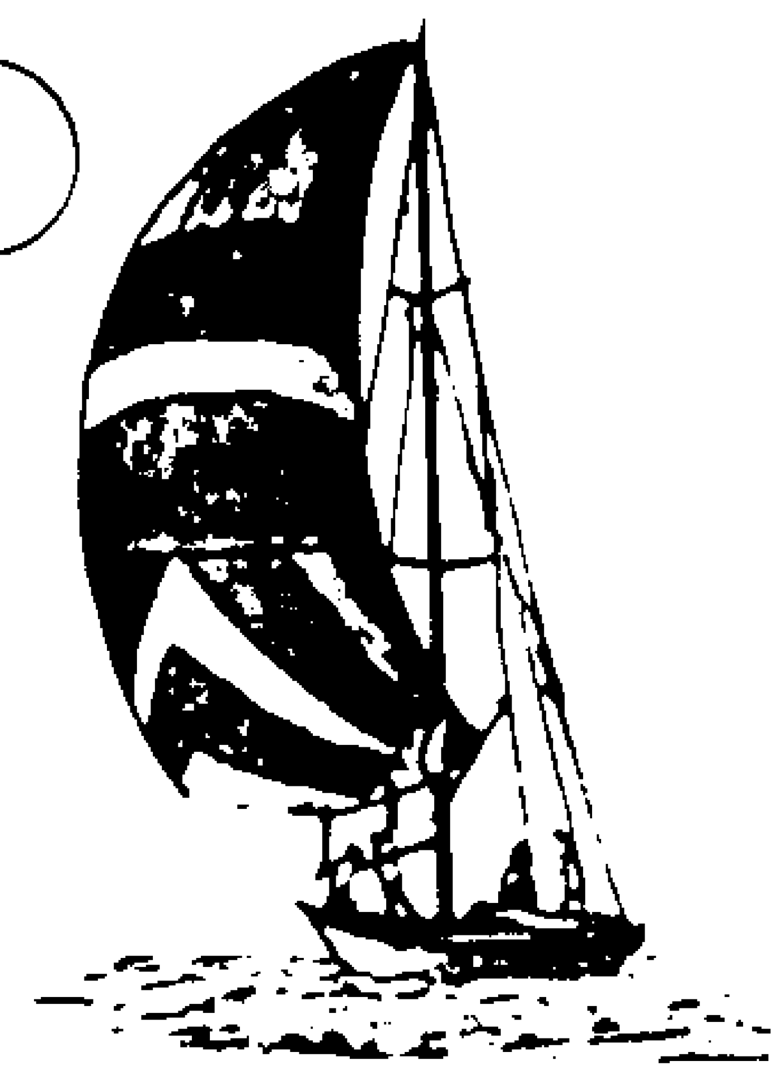
The wind will always blow. Waves will always crash against the seashore. The sun will shine for many millions of years. These sources of energy will probably never run out. But what about the oil, coal and gas we take from the earth? Will they last forever? We have to be careful about how we use these forms of energy. If we use too much, we won't have any fuels left after some years.



Energy from water.



Solar energy.



Wind energy.

Questions

A *You can find the answers to these questions in the text:*

1 What do we get our energy from?

2 What do plants get their energy from?

3 Name three natural fuels.

4 What kinds of things can be made from coal?

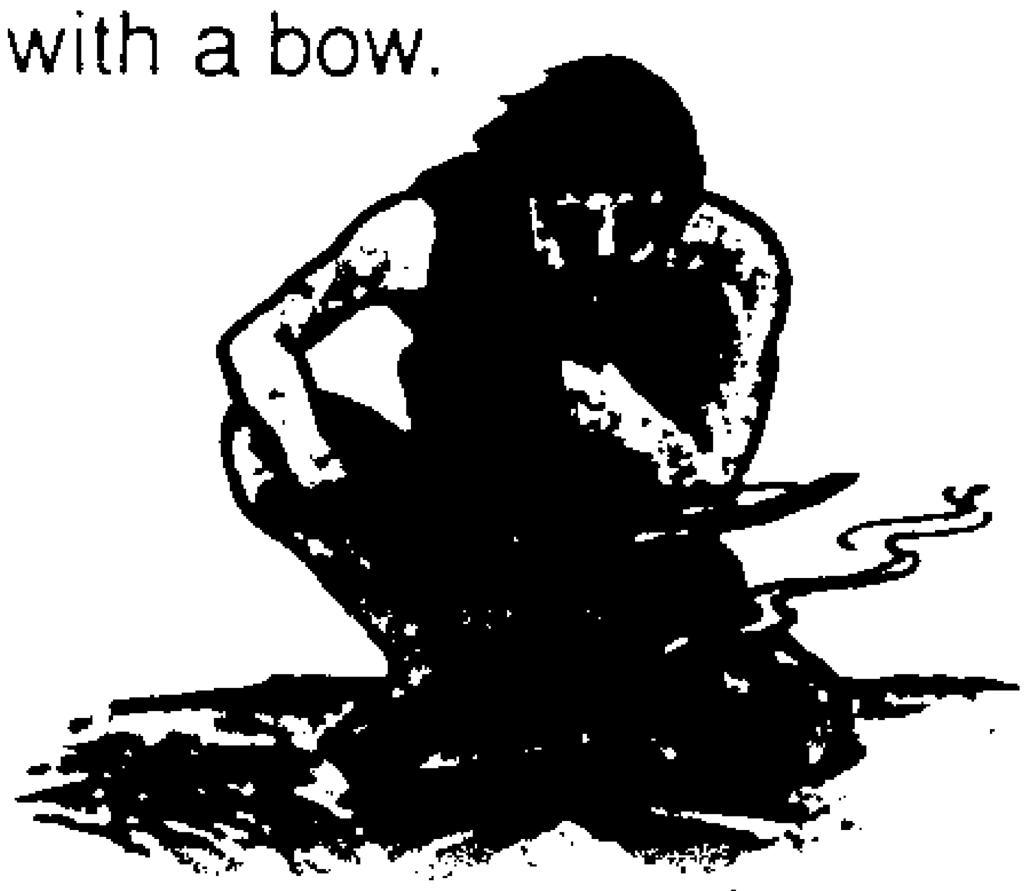
FRICTION

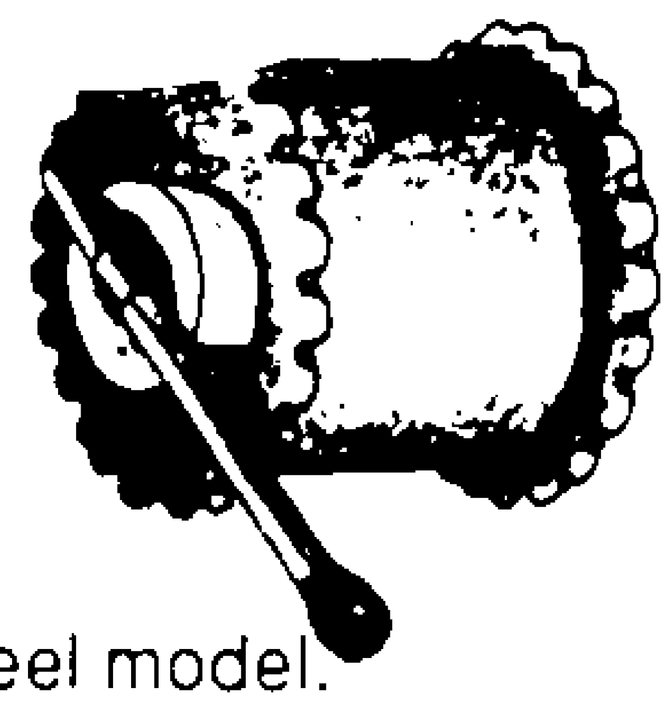
Did you make the power model with the rubber band in Unit 21? Did it work? Can you think why you had to use a small piece of candle between the matchstick and the cotton reel?

The piece of candle was used so that there would be less **friction**.

Friction means **rubbing**. Rub your hands together, quickly. What do you feel? Do your hands get hotter or colder?

Sometimes great heat is made by two things rubbing together. Many hundreds of years ago, men made their fires by rubbing two sticks together. They did this by turning a stick very quickly. They turned the stick with a bow.



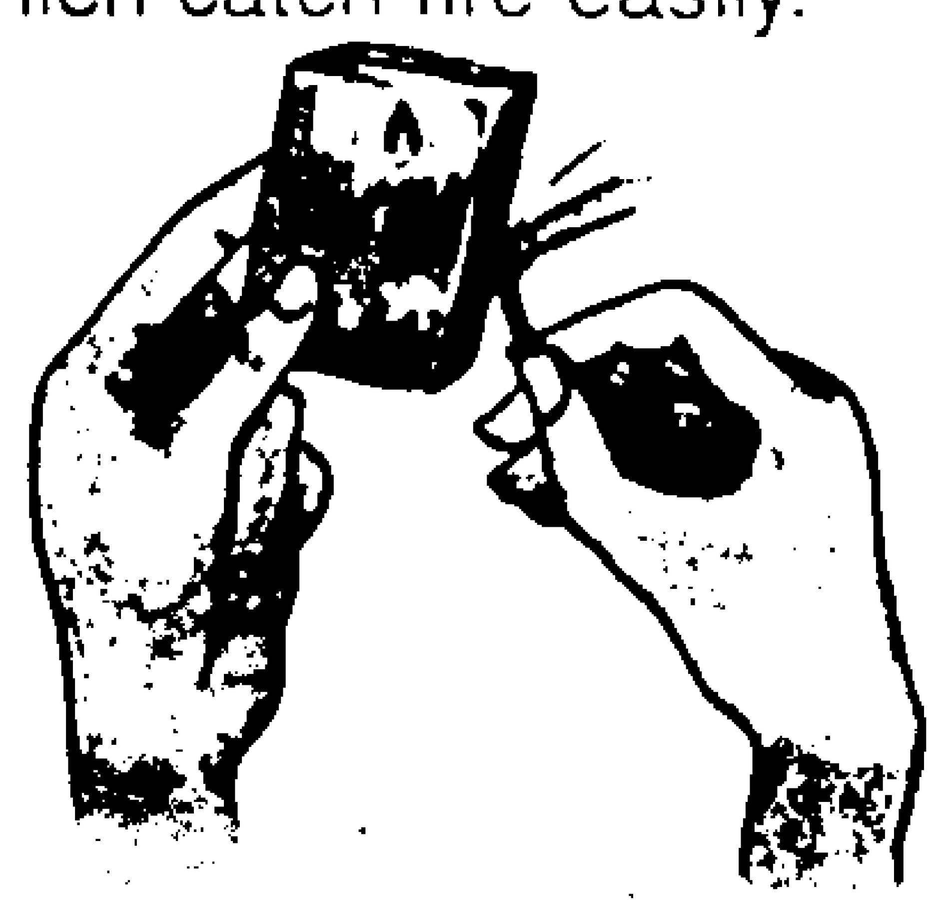


The cotton reel model.



On a cold day.

When we light a matchstick, the friction caused by the two surfaces produces a flame. The matchstick has special chemicals on it which catch fire easily.



When two things rub together they slow down. Friction slows them down.

When you walk there is friction between your feet and the ground. This is why you don't slip and fall.

In machines, friction can become a problem. The moving parts of a machine can get very hot because of friction. To stop friction we use oil or grease. This makes the moving parts of a machine slide past each other easily.



Friction between shoes and the ground.



Oiling helps to reduce friction.

Questions

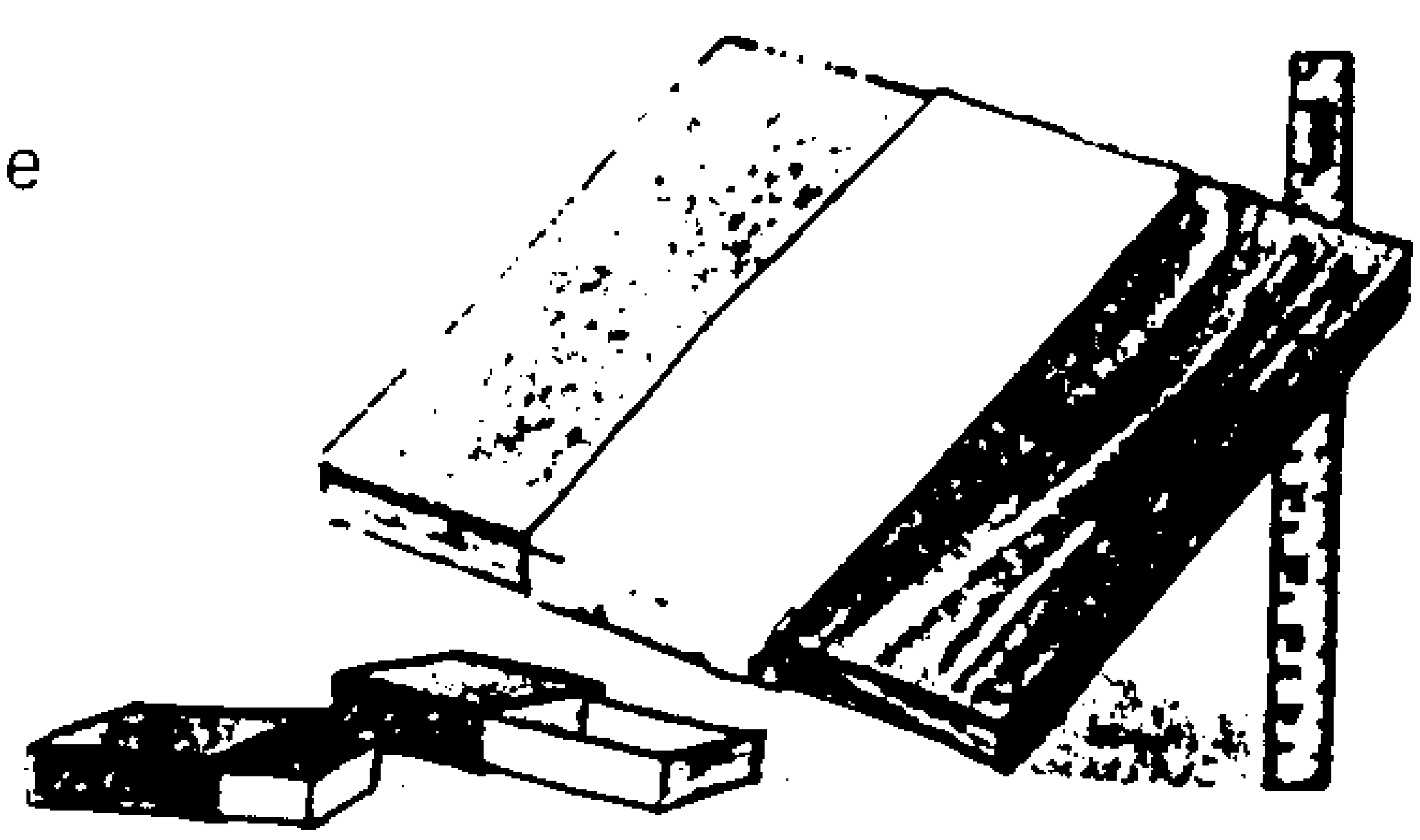
1 What does friction mean?

2 How can we reduce (make less) friction in machines?

3 Why do you think you had to cut notches in your cotton reel?

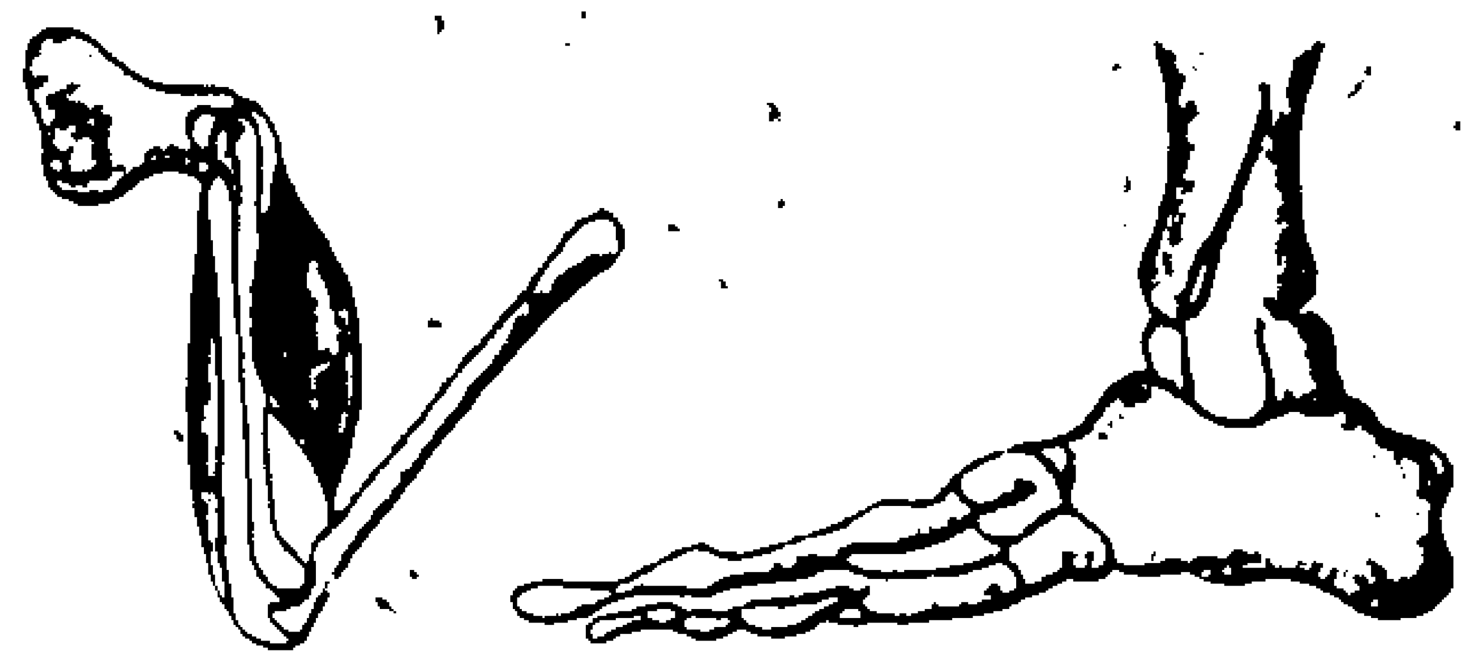
Things to do

Make a friction board. Cover a board as shown in the picture. Take two matchboxes. Fill one with stones. Let the matchboxes slide down each surface in turn. You will have to tilt the board. Measure the height you have to tilt the board so that the matchboxes just slide. What effect do the stones have? How will you show your results?



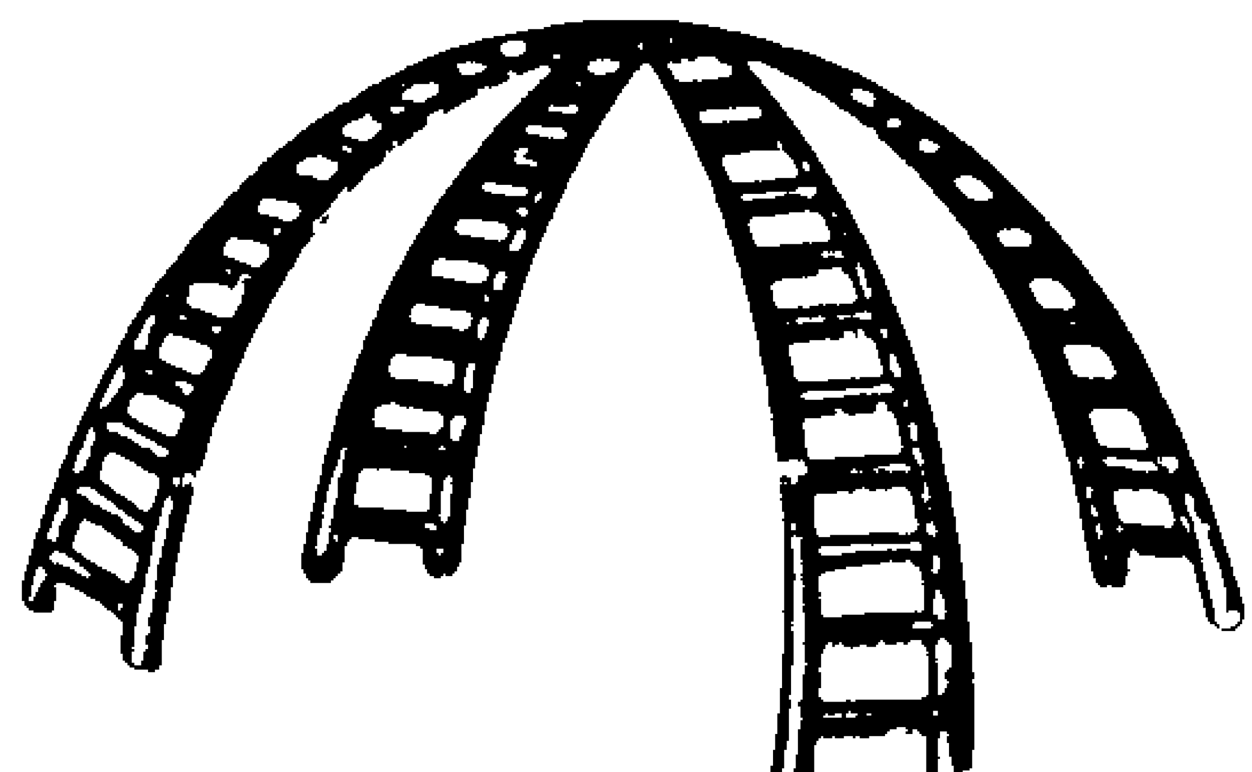
STRUCTURES

Do you remember reading about the bones in your body? All the bones together form the **skeletal system**. They form a **framework**. This framework supports the body.



Part of the framework of the body.

The bones of the body are joined together in a special way. The places where they join are called **joints**. Humans and animals move about and do things. This is why they need a body which can bend, turn, curl up and move in many other ways.

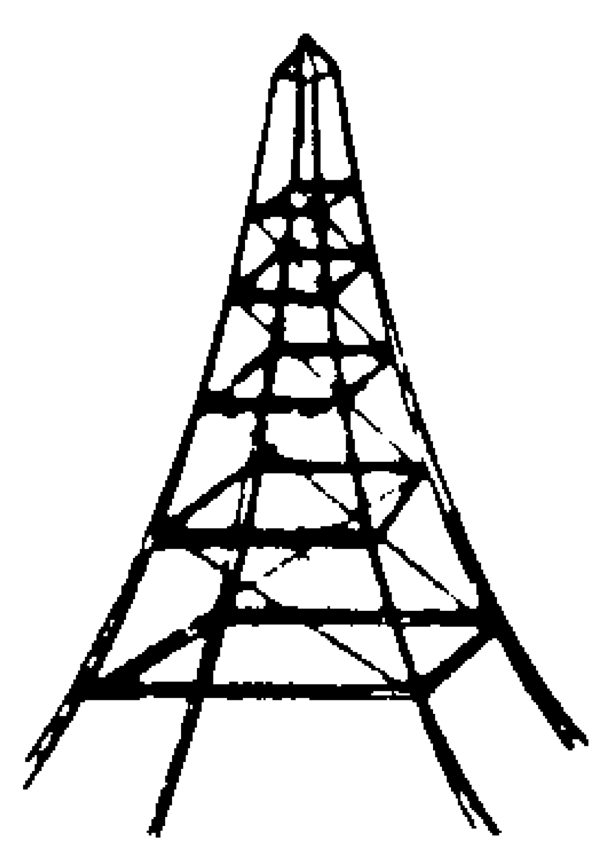


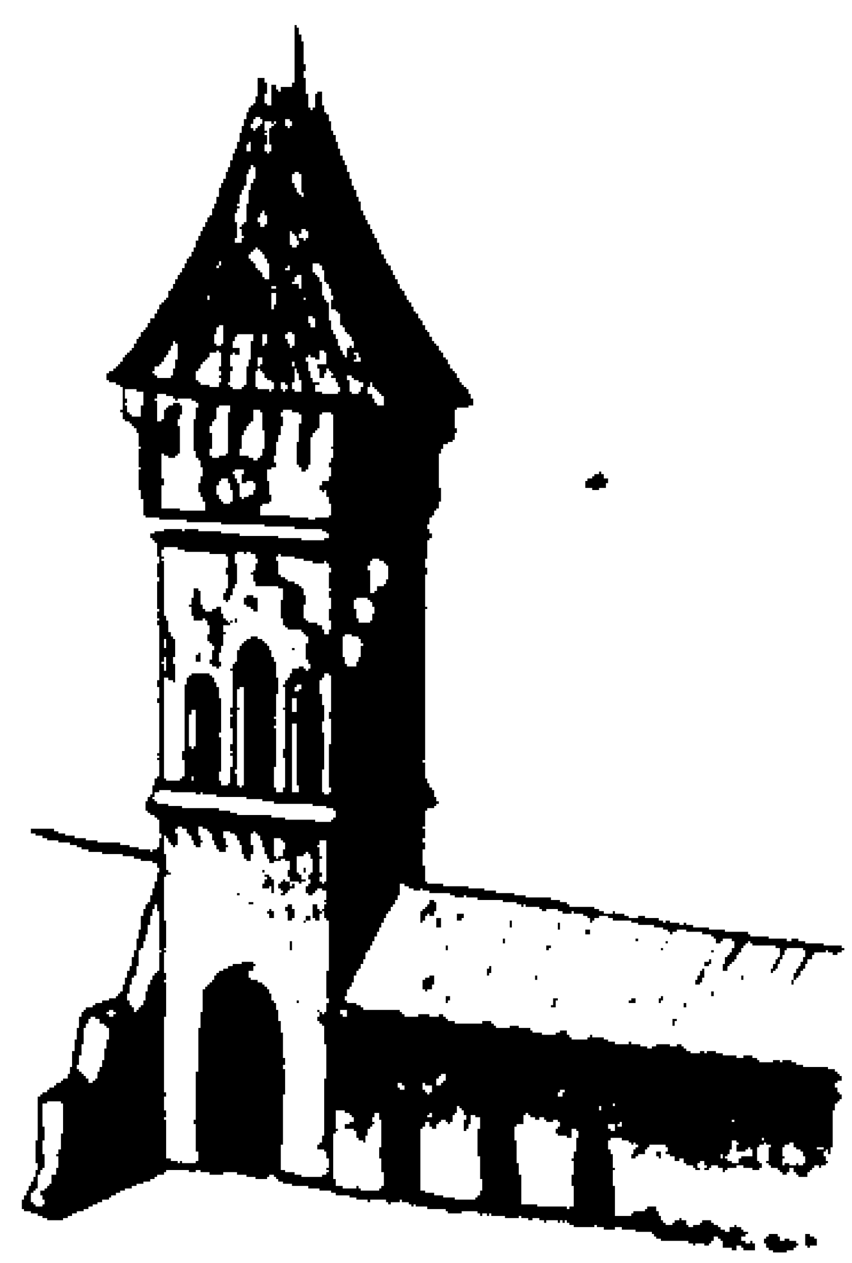
A different kind of framework.

When we build something we usually want that thing to keep its shape. Look at the way these things have been made. What is holding them together? How are they able to stand up?



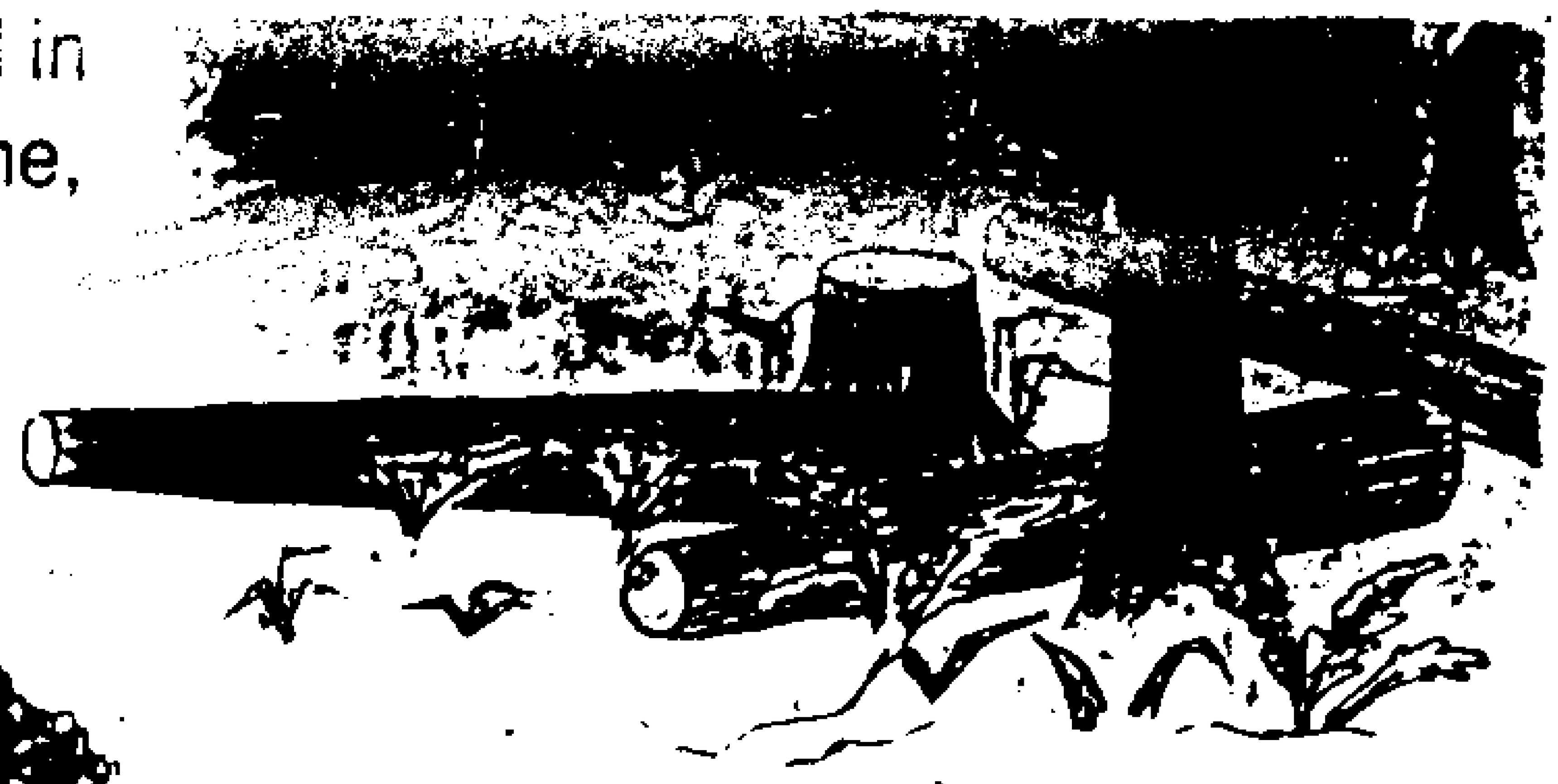


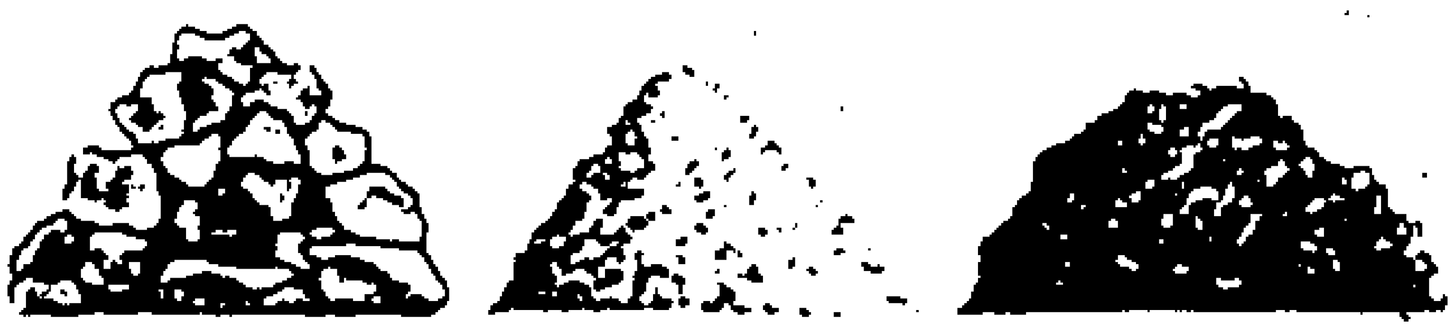




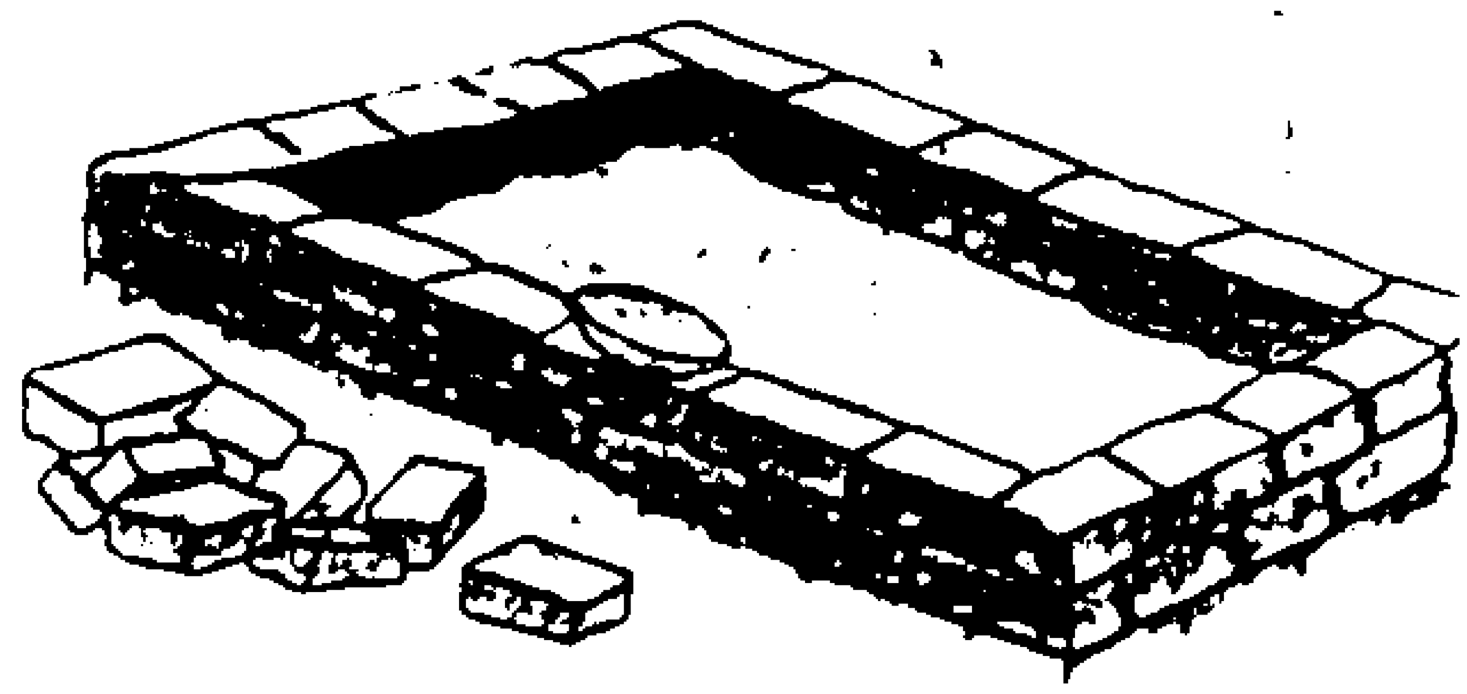
'or each of the structures above y what materials were used to make them. How are these materials joined together?

Many natural materials are used in **building. Wood, stone, sand, lime,** clay and straw are some of the materials with which we build houses.

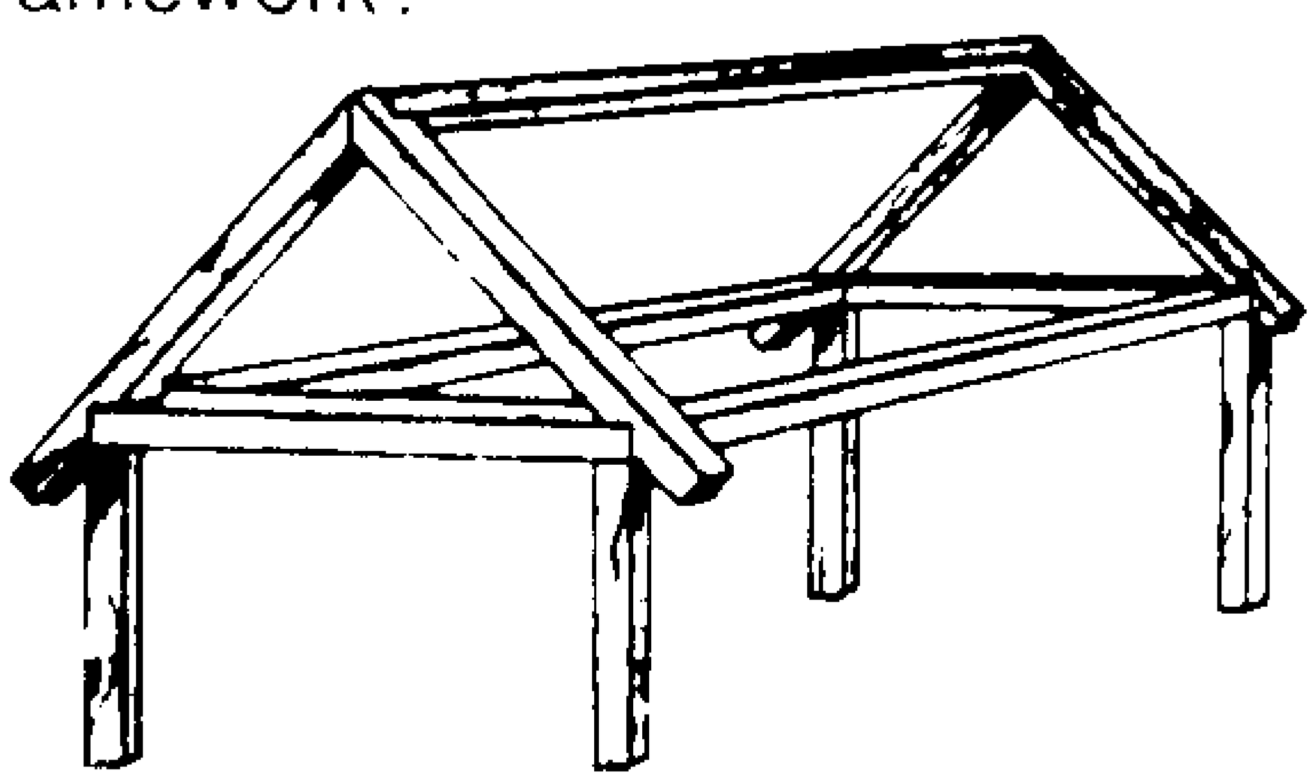




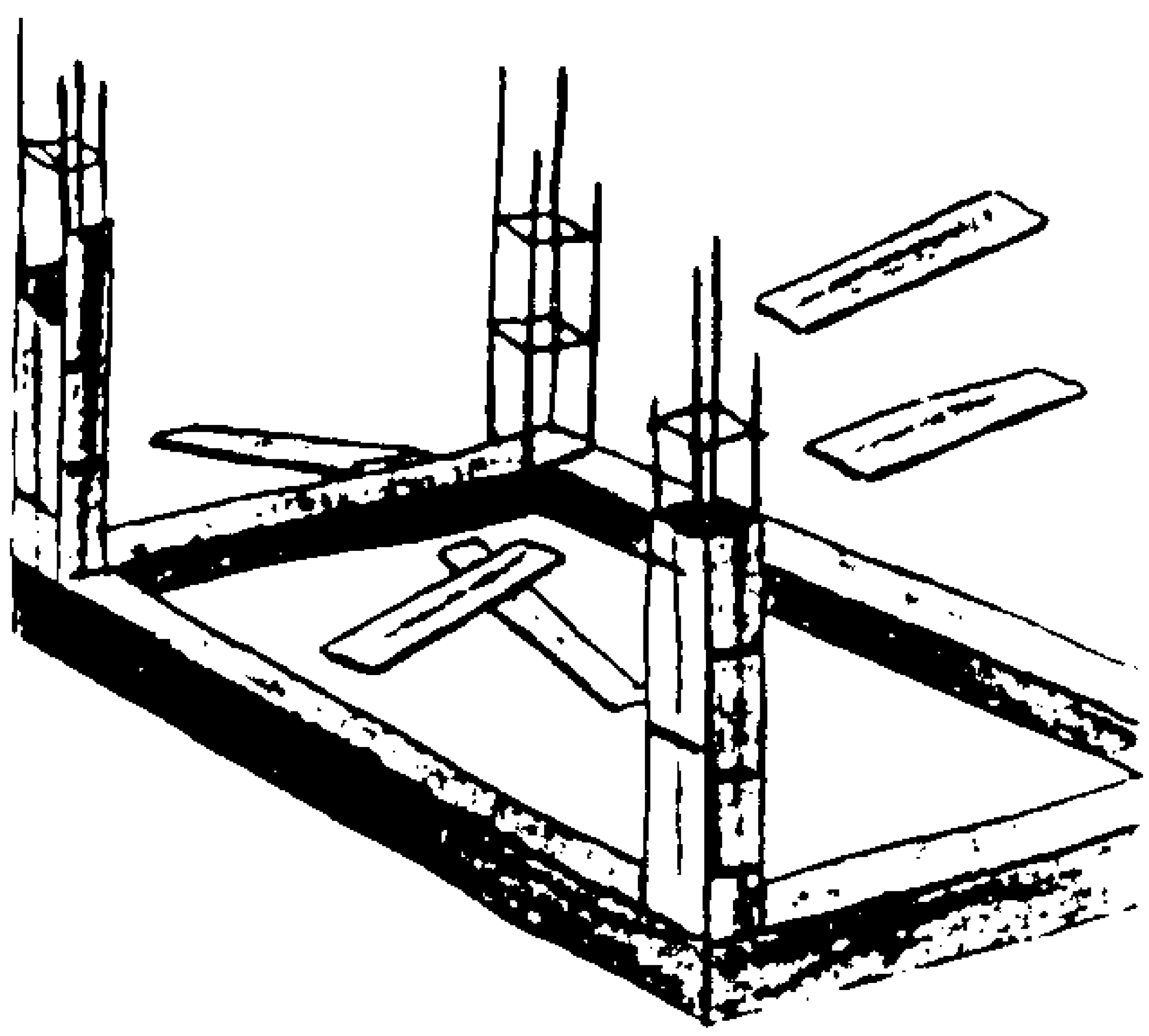
For a house we need a firm, strong **foundation**. We also need a framework. What might happen if we didn't have a foundation or a framework?



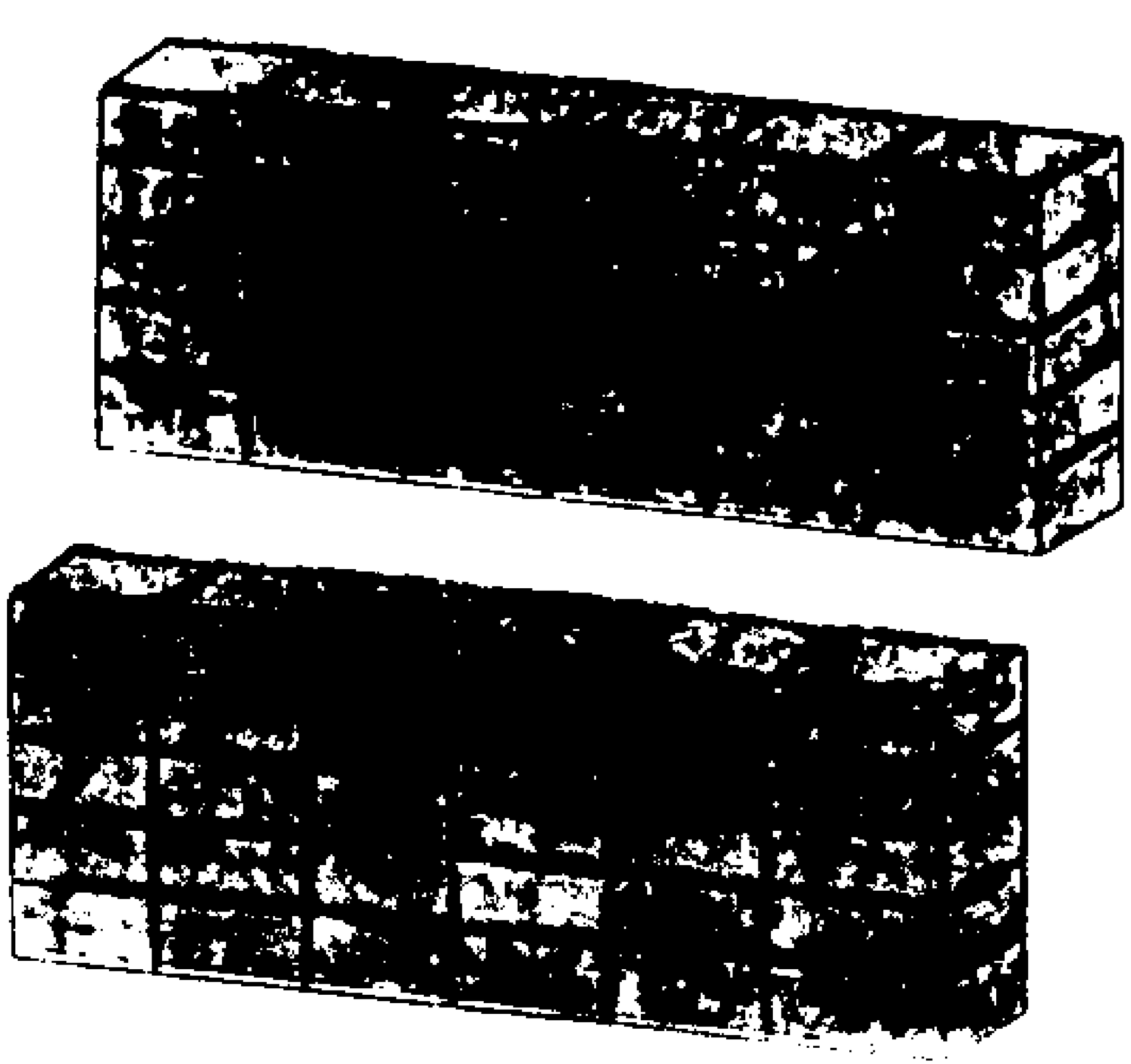
The foundations of a house.

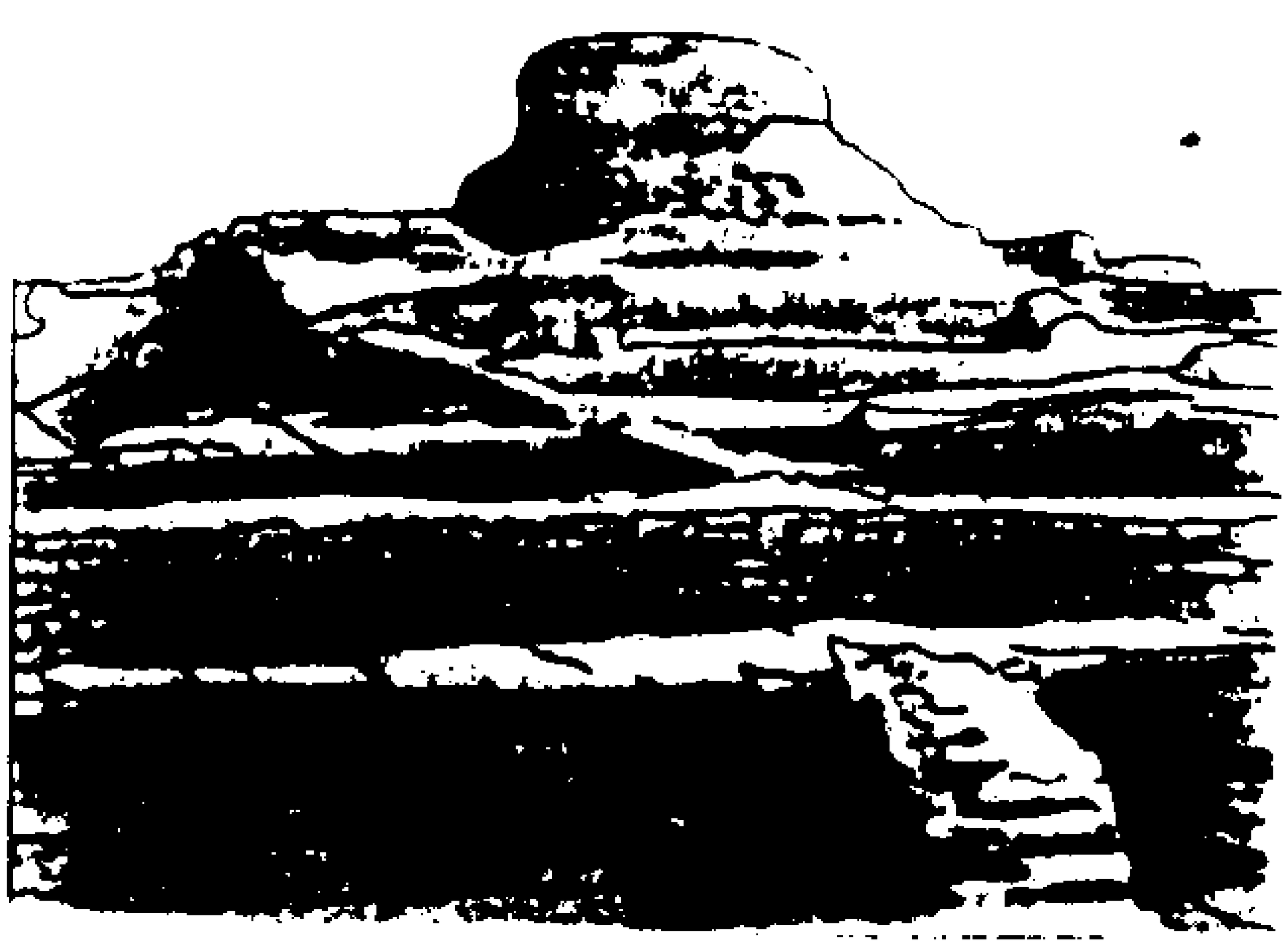


A framework of wood.



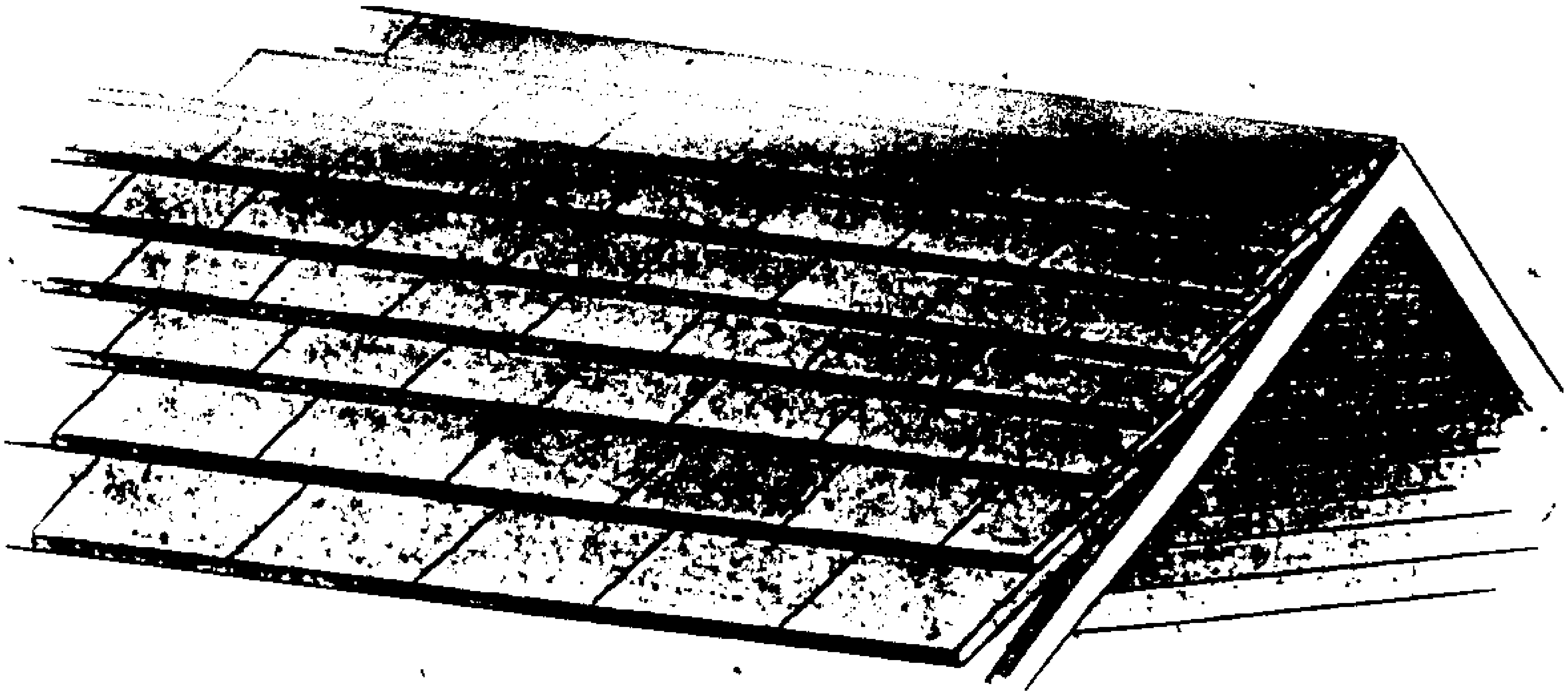
How have these walls been built? What is holding the bricks together? In what pattern are the bricks laid? Which wall do you think is stronger?

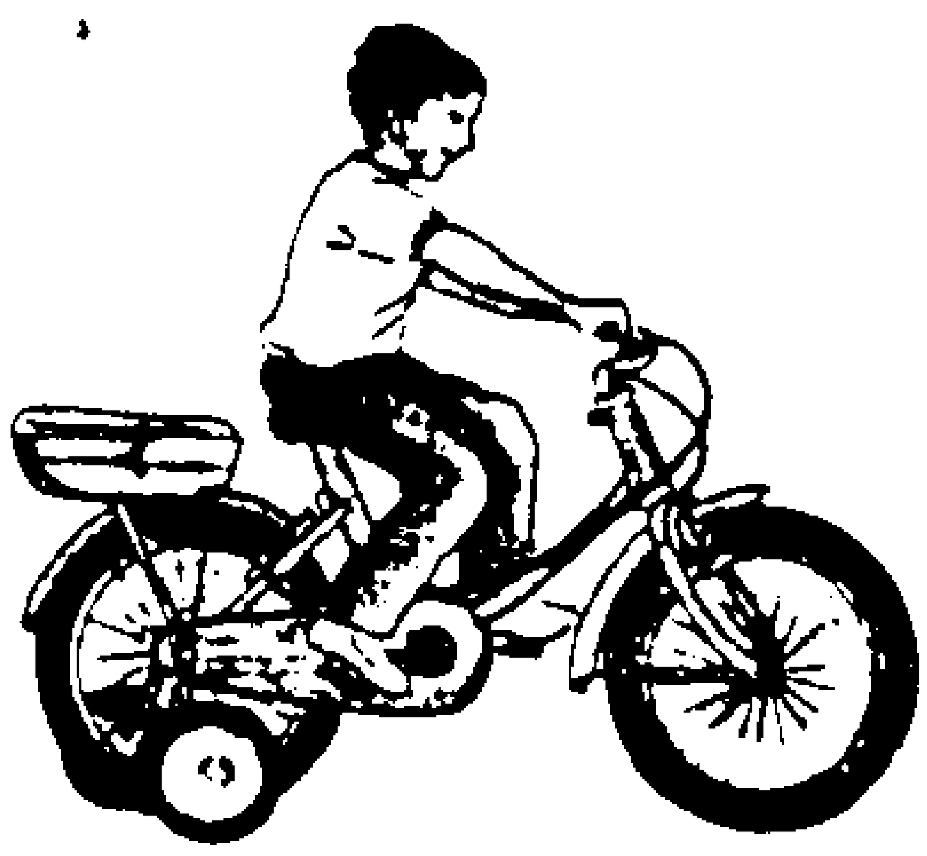




These brick walls at Moenjodaro, built [illegible]

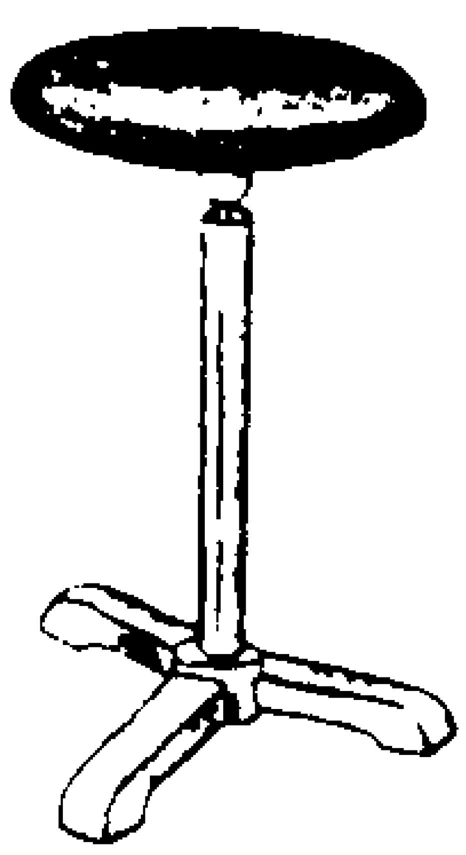
Why is it pointed?



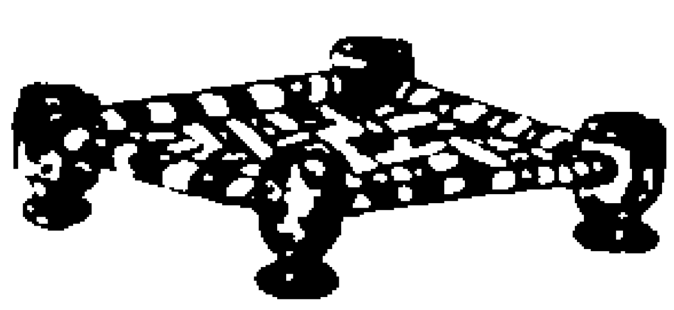


Balance

In all structures there has to be balance. Have you tried standing on one foot? What happens? You lose your balance. Look at these things. How do they keep their balance?













When we build something we have to think of a number of things. We have to make the structure strong. We also have to make it look beautiful. We should try to use materials which can be found nearby.

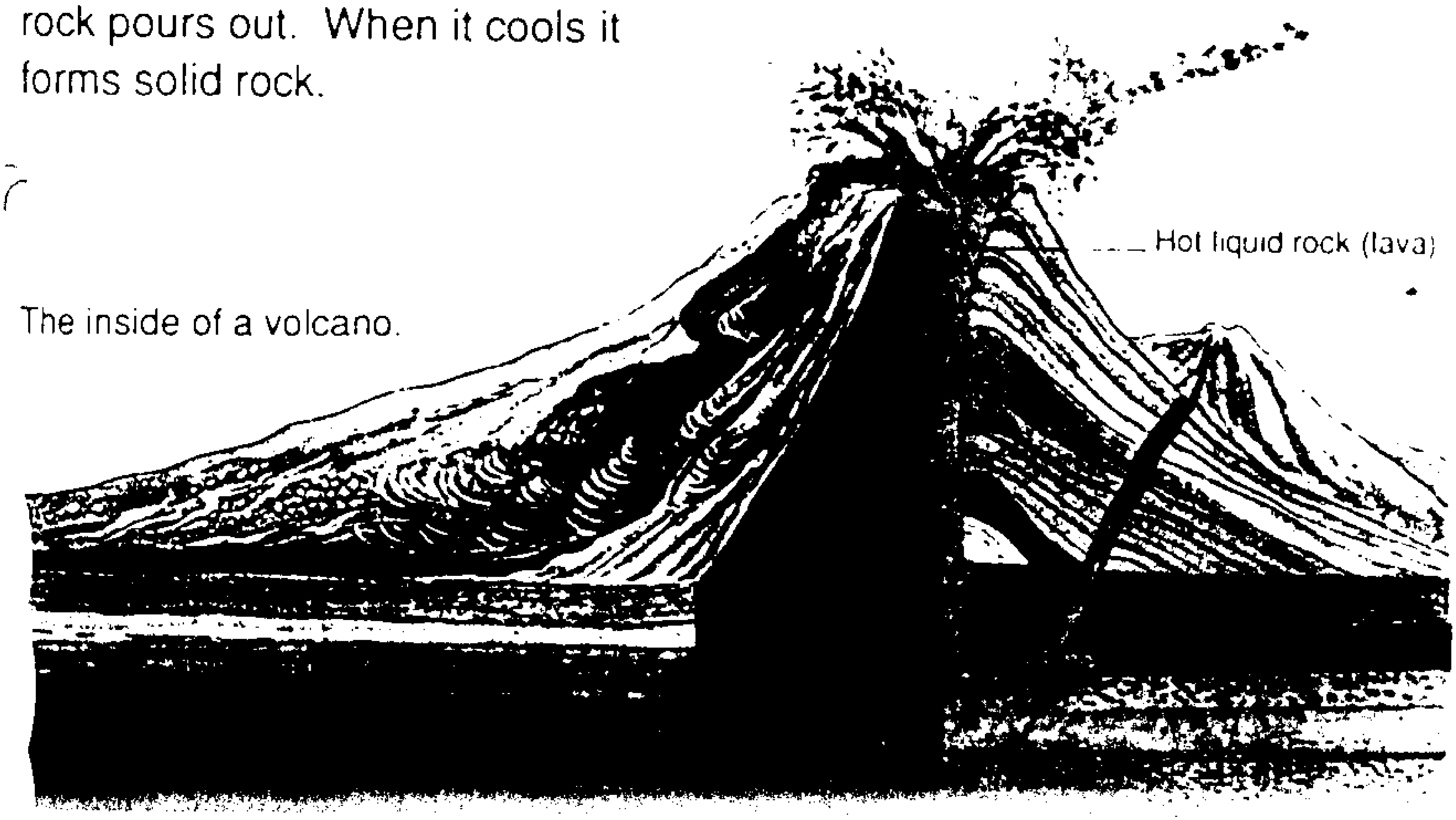
The Earth

Over many millions of years the surface of the earth has changed. Changes take place when there is an **earthquake**. Earthquakes can push up mountains. They can also do a lot of damage.



Earthquakes can cause a lot of damage.

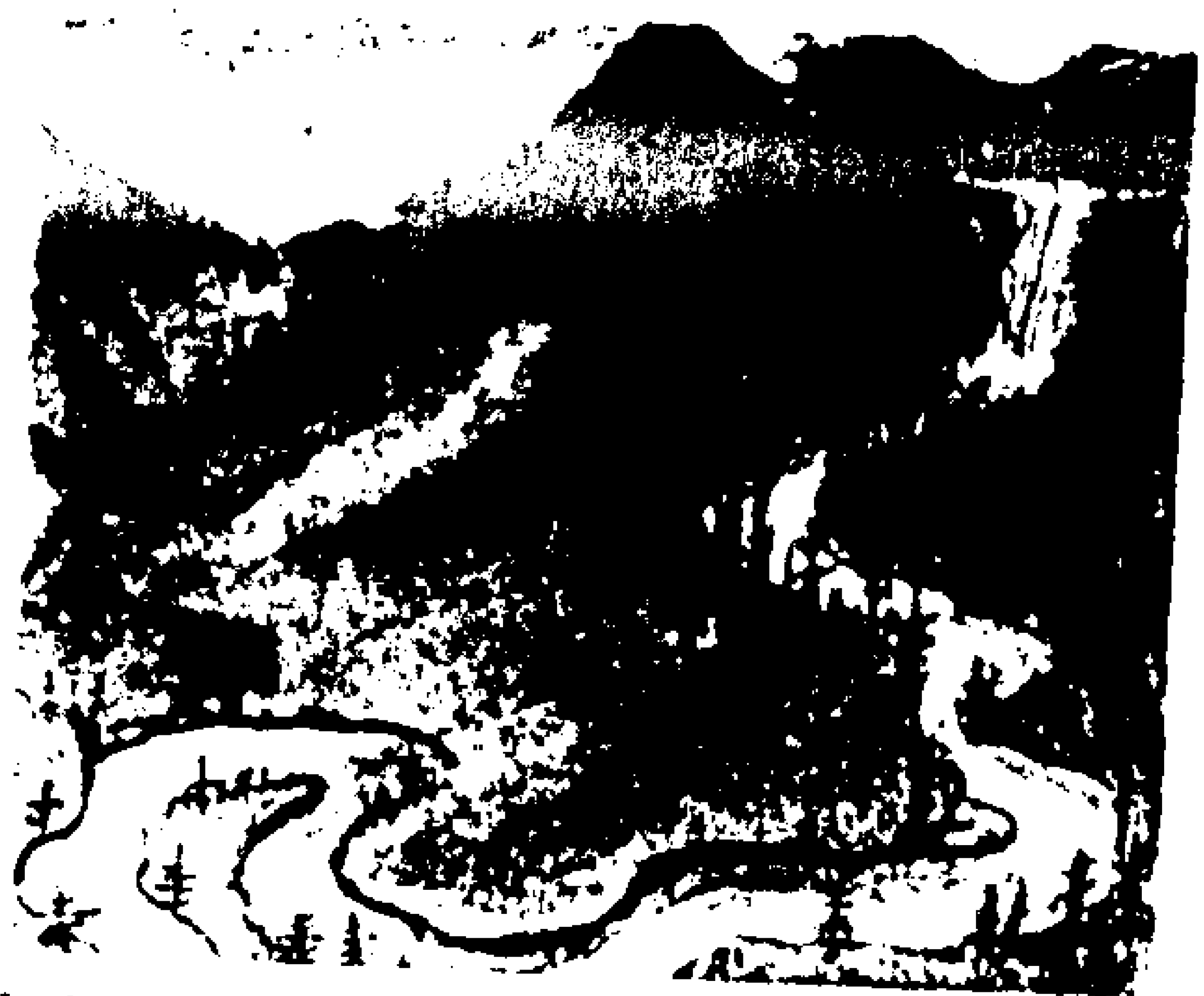
Changes also take place when a **volcano** erupts. Under the surface of the earth's crust there are gases and liquid rocks. When these get very hot they sometimes shoot upwards. They push through the surface at a weak spot. Hot liquid rock pours out. When it cools it forms solid rock.



The inside of a volcano.

Over many years the action of the **weather** and **water** can also change the surface of the earth. Rivers can cut through rocks. The waves of the sea, and the wind can break up rocks.

When the weather and water attack and change rocks, we call it **erosion**.



A river can change its course.



Rocks can crumble.

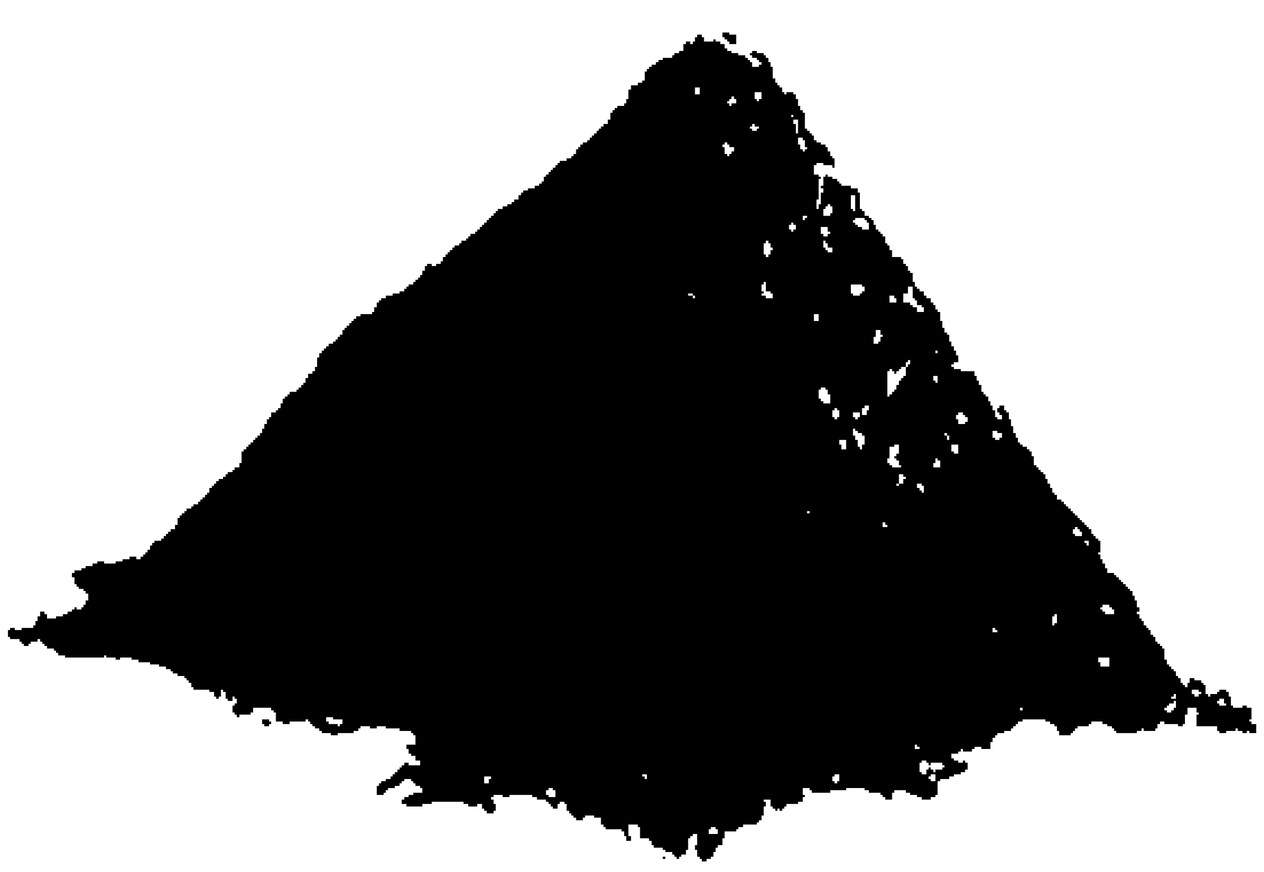


Wind and water can change the shape of rocks.

Soil

Take two soft rocks and bang them together. What happens? They break up into smaller pieces. Take some of these pieces and rub them together. They break up into even smaller pieces.

Soil is made by erosion. Soil is made up of tiny pieces of rocks and **humus**. Humus is matter which is made from rotting plants and animals. For example, dead roots can turn into humus. Soil also



compost heap. **Manure** — dead leaves

Soil is not the same everywhere. In some places it is very sandy. Sand is usually found in deserts and at the seashore.





In some places the soil is very soft. The particles are very small and stick together. This kind of soil is called **clay**.





Soil which is a mixture of sand and clay is called **loam**. This is the best kind of soil for plants. Loam is very **fertile**. Fertile soil contains a lot of humus, and plants can grow well in it.





Soil can be of different colours. The minerals in the ground give soil its colour.

Science Worksheets

Level 3

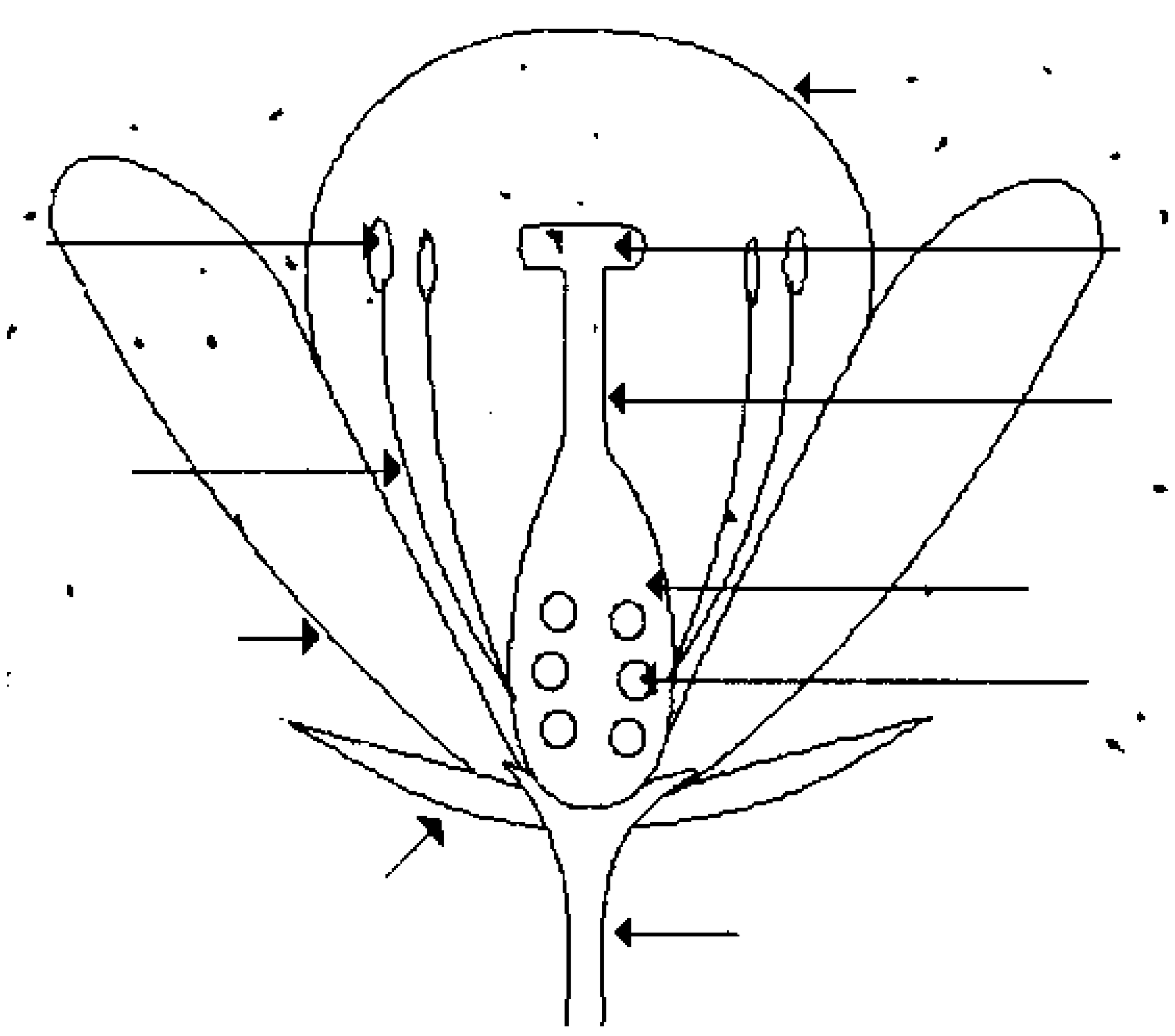
Science Worksheets

Level 3

Level3 Term 1 Week 3 Day 3

Different parts of flower
Worksheet

Label different parts of this flower.



Complete these sentences.

a) Colorful parts of flower are called ______________.

b Green parts of a flower are called ______________________.

c) The female part of flower is called _____________________.

d) The male parts of a flower are called ________________________

Answer these questions.

a) What is pistil made of?

___

___

___

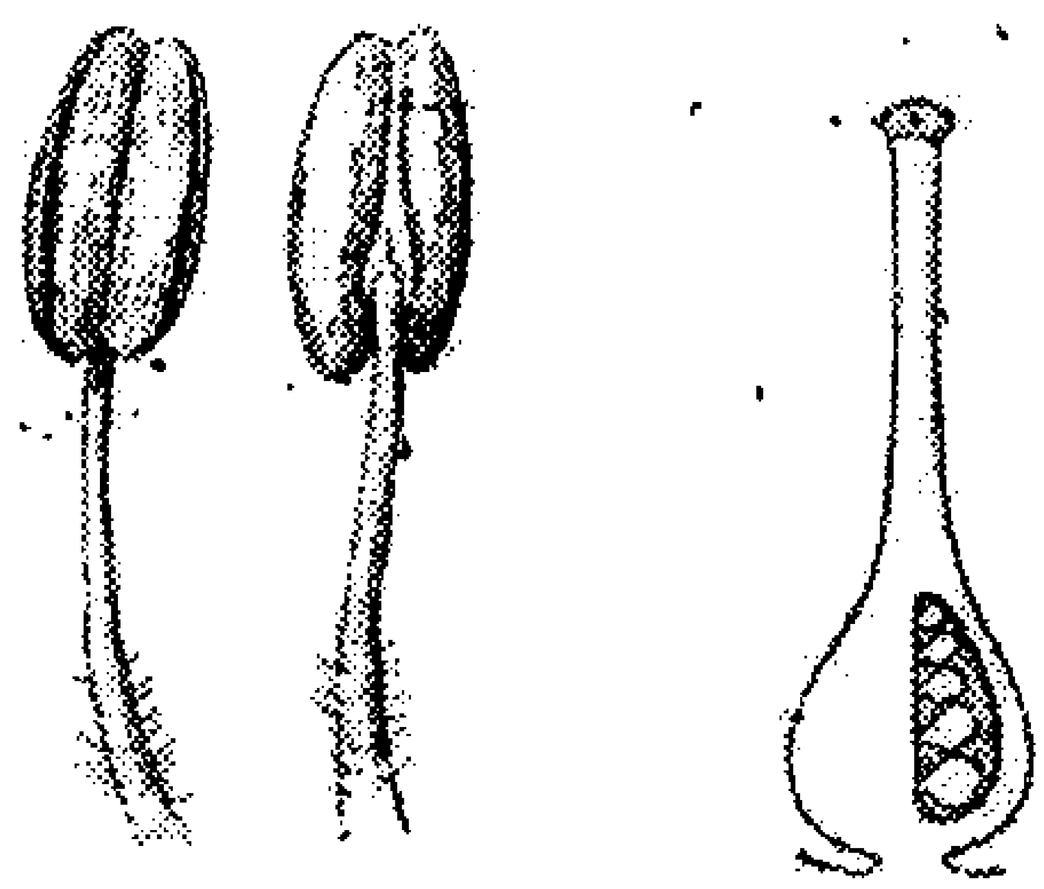
b) What is stamen made of?

Level3 Term 1 Week 3 Day 4

Purpose of Flower

Worksheet

Name these parts of a flower.



____

____

What is the purpose of a flower?

____

____

Which part of a flower turns into fruit? Put a tick

a) Ovary

b) Petals

Which part of the flower turns into seeds?

a) Ovules

b) Sepals

What is the yellow part on male parts of a flower called?

a) Pollen

b) Seed

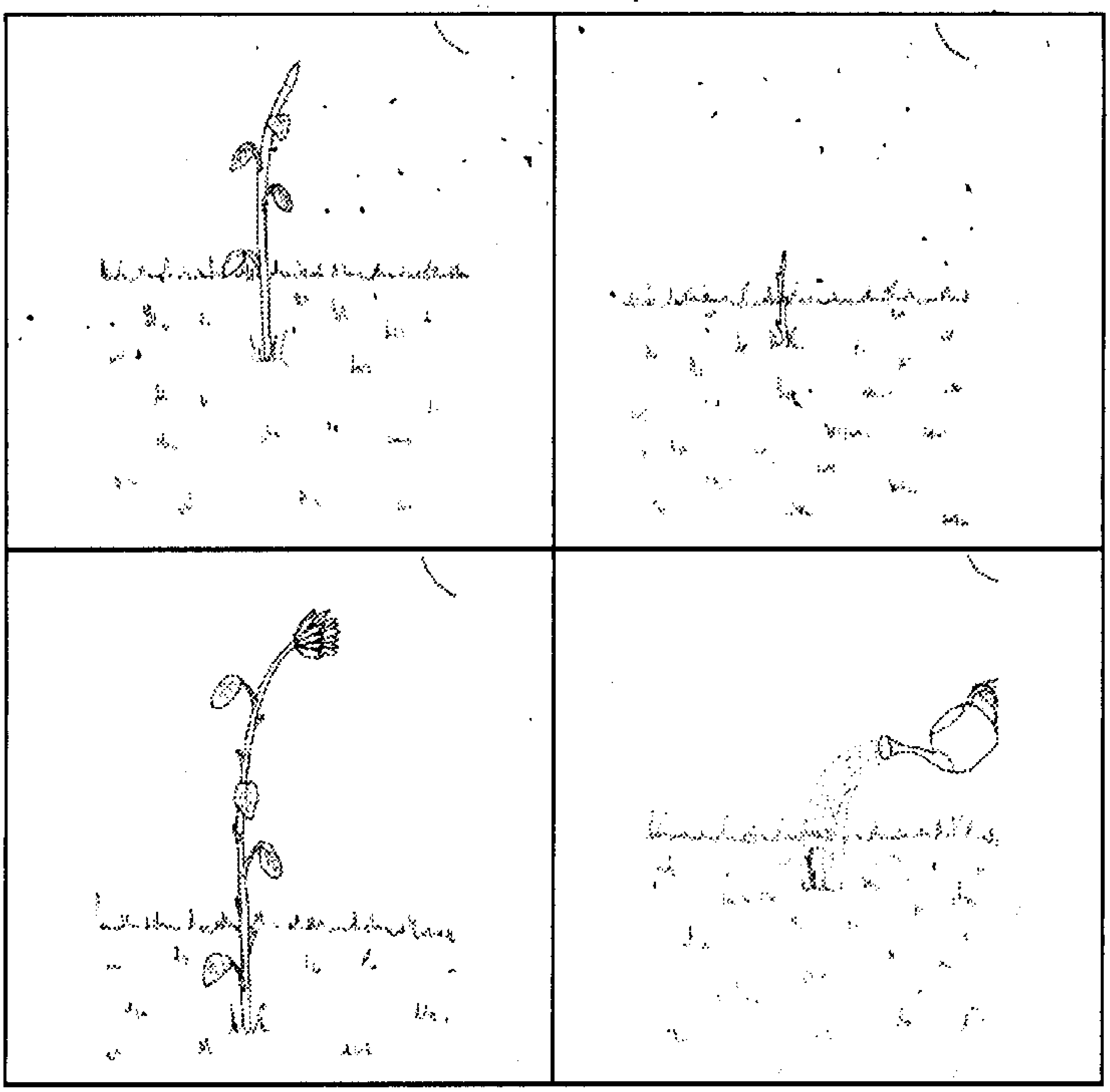
Level : 3
Term : 1
Week : 4
Day : 2

Name:

Date:

Plant Cycle

Cut out the pictures and put them in order.



Level 3 Term 2 Week 5 Day 1

OBSERVATION WORKSHEET

STEP	CHARGED/UNCHARGED		OBSERVATION ATTRACT,REPEL,NO EFFECT
	LOOSE PEN	HANGING PEN	
3			
4			
5			
6			
7			

Conclusion

a) If two objects are charged the same, they ____________________ each other.

b) If they are charged differently, they ____________________ each other.

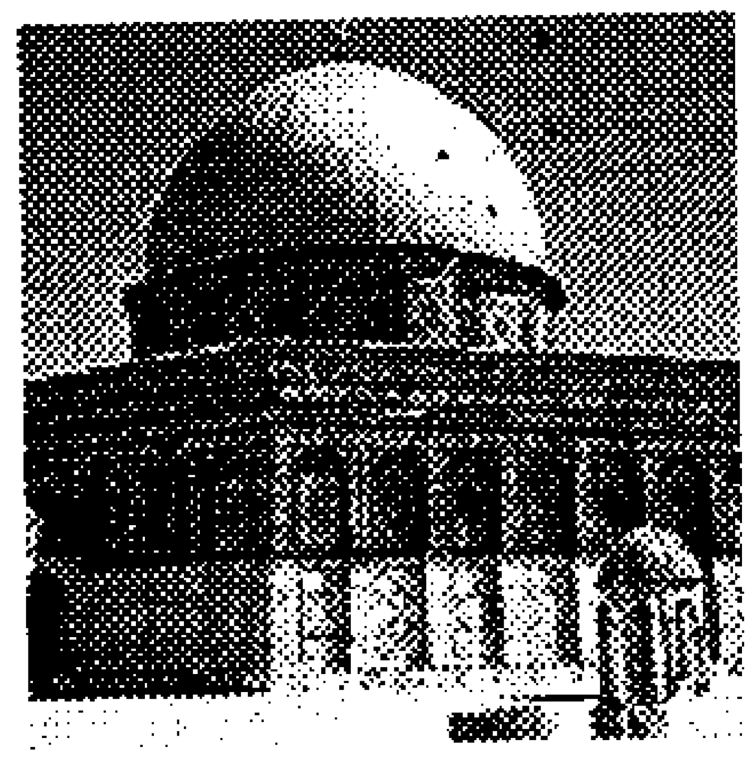
Level 3 Term 4 Week 2 Day 1

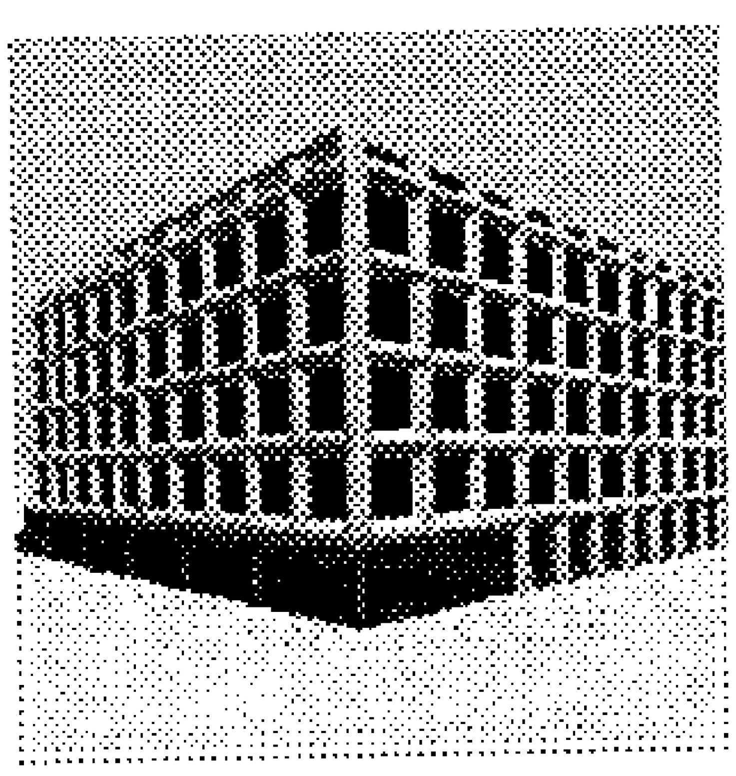
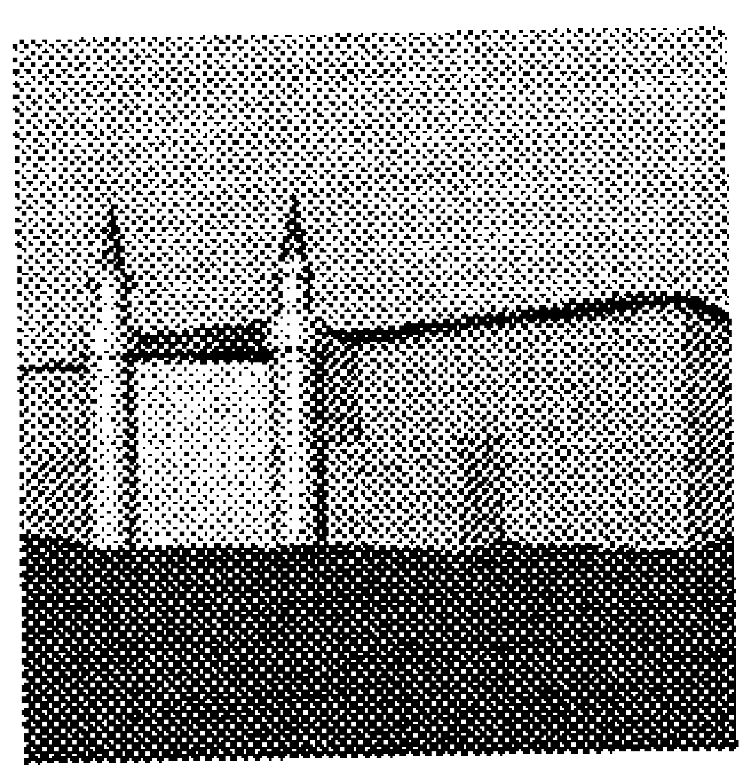
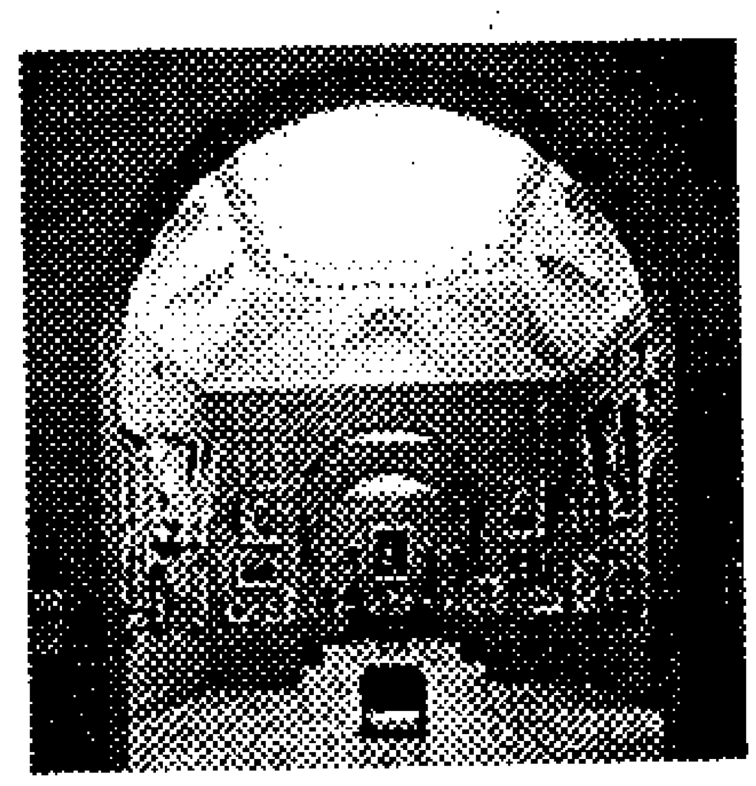
Shapes in structures

Worksheet

What shapes do you see in these structures?





Level 3 Term 4 Week 2 Day 4

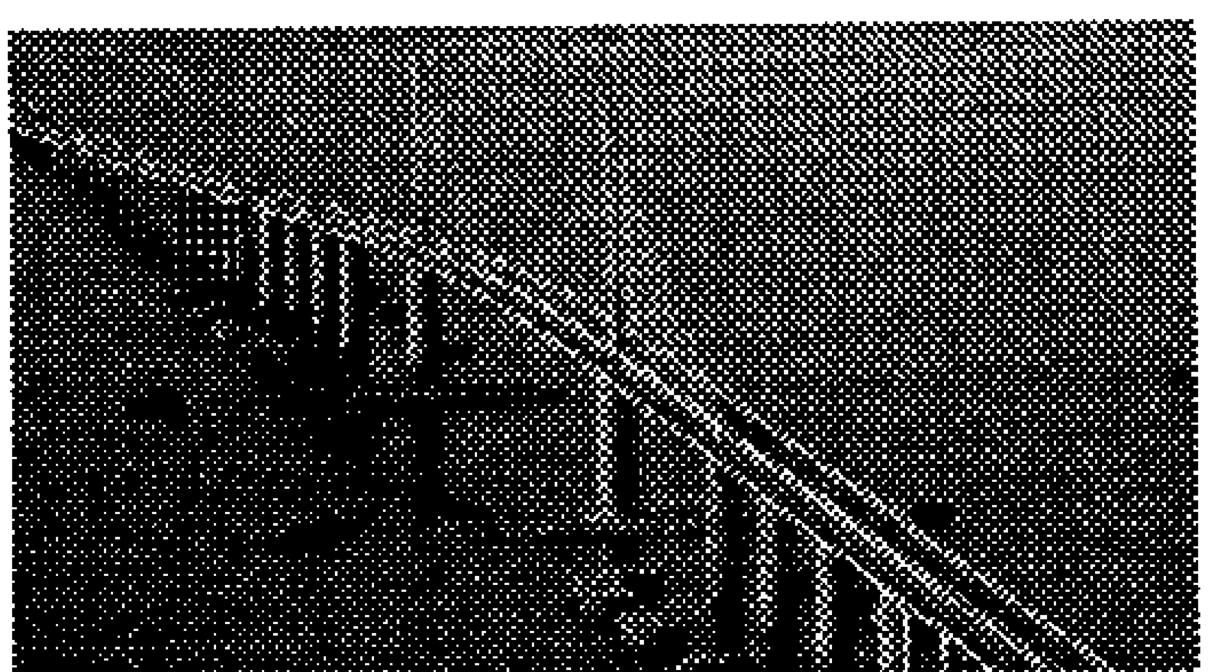
Struts and Ties

Worksheet (Activity 1)

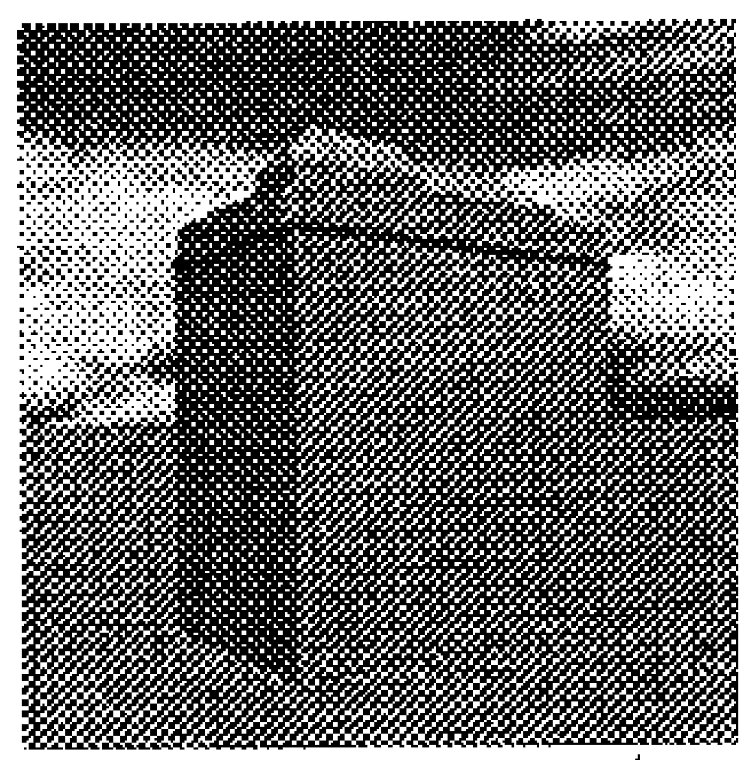
Q 1) Write which of these structures, have materials in Compression and Tension.

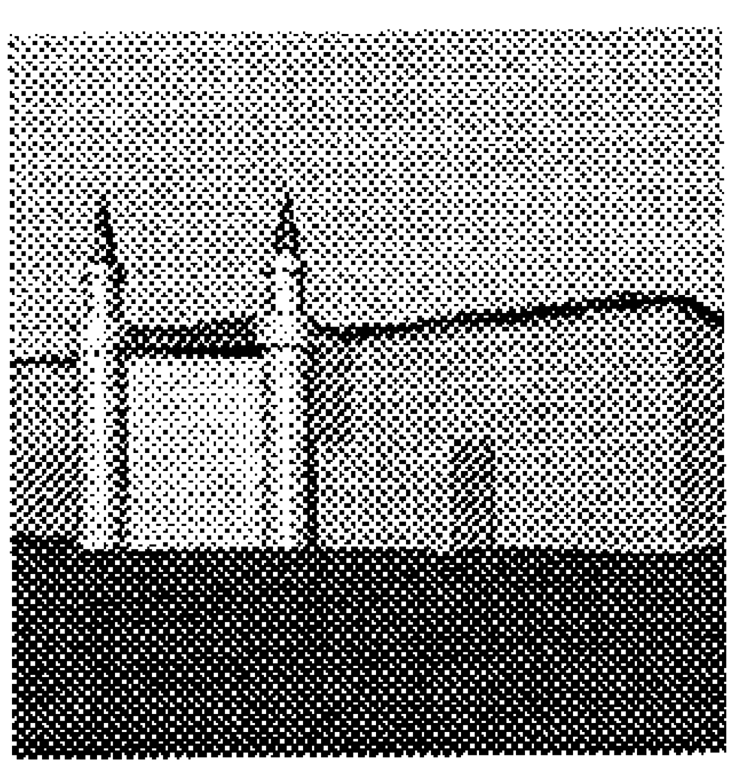


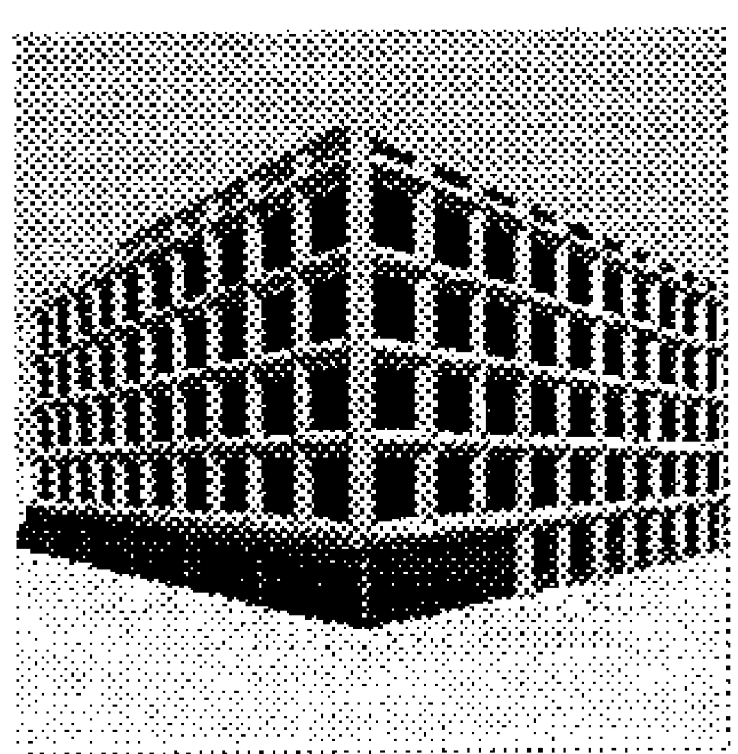
Quebec 1917 Cantilever Bridge



Cable-staying bridge Tampa, FL







Level 3 **Term 4** **Week 3** **Day 4**

Levers

Worksheet

Look at these pictures of the levers and write how does each one help us. Write the number of the statements with pictures.

Which one of these:

A) Reduce the force needed to move the load

B) Increase the speed of something

C) Makes it easier to pick something

